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ANDEAN EXCAVATIONS

II

— *Tupuraya and Cayhuasi: Two Tiahuanaco Sites* —

BY

STIG RYDÉN

STOCKHOLM 1959

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WORD

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On this occasion was rendered feasible in the support of a compatriot and friend of mine, Einar Johansson, consul-general for Sweden in La Paz. I am also greatly indebted for the charming and interesting stays at different times in the Bolivian capital. In conclusion of the work certain difficulties in the collection of the material for study and publication, and in the attempt to secure the necessary permit valid for publication. In connection I also recall with gratitude the state-ment published by Don Carlos Ponce de León (Boletín Municipal No. 1044, p. 11, La Paz) at the Primera Reunion de la Mesa Redonda de

as to two of Consul-general Einar Johansson's assistants, Einar Gustafsson and Eskil Carlsson, for their great help during a period of illness in La Paz. I am drawn to the Tupuraya site by Señor Don Luis Zamora, a friend of mine since many years, who was instrumental in securing the needed permission from the Señor Don Gustavo Tejada. Of the Cayhuasi site my compatriot, the late Mr. Bror Wikström, at the time was at Oruro. The landowner, Señor Don Lucio Arze, invited me to start digging there. To all of these gentlemen I am indebted for exquisite hospitality while busy

FOREWORD

In 1951—52 I was given an opportunity of doing a certain amount of field-work in Bolivia. A start was made in the provinces of Muñecas and Bautista Saavedra. The results of these initial operations were published in Vol. I of this work (*Rydén* 1957). The present concluding volume deals with my work in the Cochabamba and Oruro areas. However, insofar as concerns Cochabamba, the examination of the pre-Tiahuanaco dwelling site Chullpa Pampa was treated in an earlier report (*Rydén* 1952). Additional notes on Chullpa Pampa will be published in due course.

My work in Bolivia on this occasion was rendered feasible in the first place by the generous support of a compatriot and friend of mine since earlier visits, Mr. Einar Johansson, consul-general for Sweden in La Paz. To him and his wife I am also greatly indebted for the charming hospitality accorded me during stays at different times in the Bolivian capital. Again, when upon conclusion of the work certain difficulties arose relative to the disposal of the material for study and publication, Mr. Johansson finally managed to secure the necessary permit valid for a brief period. In this connection I also recall with gratitude the statement in my favour spontaneously published by Don Carlos Ponce Sanginés and colleagues (*Boletín Municipal* No. 1044, p. 11, La Paz 1953) in connection with the Primera Reunion de la Mesa Redonda de Arqueología Boliviana.

I owe special thanks to two of Consul-general Einar Johansson's assistants, Messrs. Olle Gustafsson and Eskil Carlsson, for their great helpfulness towards me during a period of illness in La Paz.

My attention was drawn to the Tupuraya site by Señor Don Luis Kremser, of Cochabamba, a friend of mine since many years, who also was instrumental in securing the needed permission from the owner of the land, Señor Don Gustavo Tejada. Of the Cayhuasi site I was told by a compatriot, the late Mr. Bror Wikström, at the time consul for Sweden at Oruro. The landowner, Señor Don Lucio Arze, kindly permitted me to start digging there. To all of these gentlemen and their families I am indebted for exquisite hospitality while busy

in these areas. In Cochabamba, also my compatriot Mr. Rune Sjöström and his wife were of great help to me. In addition, many valuable tips concerning Cochabamban archaeology were given me by Señora Geraldine B. de Caballero, Señor Don Enrique Soruco R., Professor Dick Edgar Ibarra Grasso, Mr. and Mrs. Lester Thayer, and, in the case of Oruro, Señor Don Lisandro A. Condarco.

I have taken the liberty of dedicating this volume to the memory of my friend the late Mr. Bror Wikström but for whom no work could have been thought of in the Oruro area. Mr. Wikström lost his life in an air accident 1957 at a spot in the very area here concerned.

To the following institutions and private parties, some of them not previously mentioned, I am indebted, as in the case of the excavations earlier reported, also for the aid granted me in various ways in connection with the work here dealt with:

Anna Ahrenberg's Foundation, Gothenburg

The Humanistic Foundation, Stockholm

The Swedish Society of Anthropology and Geography, Stockholm

The Wenner-Gren Foundation for Anthropological Research, New York

Late Dr. Wendell C. Bennett, New Haven, Conn.

Mr. Gösta Bergman, director, Gothenburg

Mr. Erik Brodin, shipowner, Stockholm

Mr. Gomer Brunius, consul for Eire, Gothenburg

Mr. Marcus Claesson, director, Kungälv

Mr. Nils Colliander, engineer, Gothenburg

Mr. Carl Albert Fallenius, Consul for Norway, Gothenburg

Mr. Nils Gustafsson, director, Gothenburg

Mr. Nils Göth, director, Upsala

Mr. Eric Karling, chemist, Gothenburg

Late Mr. Knut J:son Mark, merchant, Gothenburg

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Señor Don Pablo de Rada, consul-general for Panama, La Paz

Mr. Henry Sjögren, director, Gothenburg

Aktiebolaget Tidan, Mariestad

Aktiebolaget Vitrum, Södertälje

Hasselblads Fotografiska AB, Gothenburg

Thanks are also due to artist Harald Faith-Ell, who gave my Tupuraya excavation maps and tableaux their technical finish, and to

Mr. S. Peterson Weld, who assisted in the translation, to Dr. Jan Söderström who aided in checking the Tables, and Mrs. Gerda Törnberg, who did the typing.

Publication of the present volume was made possible by a generous contribution from the Humanistic Foundation (Humanistiska Fonden), Stockholm, and, since some of the data herein contained originally were meant for Part I, also by the Wenner-Gren Society (Wenner-Grenska Samfundet), Stockholm, which defrayed the cost of printing that volume.

Following my departure from Bolivia, a renewed check-up of the collections before their being placed at my disposal for treatment in Sweden was deemed necessary by the authorities. Earlier, on a similar occasion, a series of specimens had been picked out for account of Museo Nacional in La Paz. At this later cataloguing in my absence additional specimens were taken out. By courtesy of the Museum I received drawings of the specimens selected. However, in the case of the later batch, the markings on the bottom of each specimen stating the grave in which found had been overlooked at the cleaning. Thanks to my field-notes and the accompanying maps I nonetheless managed to identify the majority. As regards the Tupuraya specimens, however, their placing is doubtful in a few cases. Such specimens are marked by a query after the vessel's number in the description. Another unfortunate consequence of the re-check in my absence was that all samples intended for C-14 dating were lost. As to Tupuraya, it was here, however, only a case of some bits of charred wood that perhaps would have proved insufficient for such tests. The larger urns from Tupuraya, and the larger vessels from Cayhuasi, also some of the smaller vessels found in sherds — this applies in particular to the Muñecas specimens earlier publicized — were packed in separate parcels for the transportation. At the check-up each such parcel with its contents was given its particular number and the sherds counted according to the catalogue made up. Subsequently, at the restitution of the material following its inspection, the arrangement of the specimens necessarily had to tally with the catalogued data. This precluded restoration of the vessels in toto. Hence, in the case of Tupuraya, the form of the urns is reproduced only from what appears from the excavation maps and the urn's sherds without these having been put together to a complete vessel. Their form, consequently, is to some extent problematical. On the other hand, the larger Cayhuasi specimens are shown in their original intact state even if some sherds apparently were lost in transit.

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




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To Dr. Manuel Liendo Lazarte, head of Museo Nacional »Tiahuanaco« in La Paz, and his assistants, I am indebted for excellent representations of the specimens taken over by the museum before the collections, as already mentioned, were placed at my disposal in the form of loan for study and publicizing in Sweden.

Similarly my Bolivian friend and colleague Don Carlos Ponce Sangines, La Paz, has kindly supplied me with a number of archaeological publications recently issued in Bolivia and used by me for comparative studies. I also recall with gratitude and pleasure the reception accorded me in his home in La Paz and on the family estate in Muñecas as well as the time we spent together camping in remote mountain valleys of the Andes with archaeological discussions by the flickering light of the candle and with pipe, cigarette or coffee cup in hand.

The entire lot of material which accrued from my Bolivian excavations 1951—52 is now in the possession of Museo Nacional, La Paz.

The following colour key has been used:

	= white
	= black
	= brown (red)
	= orange
	= grey

Stockholm, May 1959.

Stig Rydén.

T U P U R A Y A

INTRODUCTION

Tupuraya is the name of the northeasternmost section of the city of Cochabamba, next the capital La Paz the largest urban centre in Bolivia. End of March and beginning of April 1952 I examined in this area a combination residential and burial site here referred to as "Tupuraya".

The site is located approximately 200 metres north of Rio Rocha, which runs through the northern and western parts of Cochabamba city while forming the southern limits of Tupuraya district. A cross marks the spot on Sketch A on folded Map 1. This sketch is based on one section of a map, *Plano Guia del Radio Urbano*, issued September 1945 by the municipality of Cochabamba. As regards Tupuraya, however, the net of streets and roads, here reproduced in virtually unchanged form, at the time of my examination had already been modified to some extent. Hence a few additional data on the location might be called for, especially since current projects for inter alia new streets in the near future are bound to alter the city plan considerably in this area. Thus, while I was there, work was in full swing on a new street, Avenida Uyuni, on the right bank of Rio Rocha, i. e. the Tupuraya side, this in accordance with a project also involving levee constructions. Another street, Avenida America, running parallel with Avenida Uyuni about 300 metres to the north, had already been partly completed. The area between Avenida America and Avenida Uyuni was as yet unaffected by any new road constructions while the direction of the street or road named Camino a Sacaba, on the map here reproduced as running immediately north of the site, was consequently still the same. In 1952 Tupurayan development tended to the suburban — clusters of unpretentious adobe buildings along the narrow thoroughfares with large open tilled plots or shady glades in between (Figs. 1—2). An occasional smaller industrial enterprise could also be observed in this vicinity. Cochabamba is now indeed passing through a phase of rapid expansion



Fig. 1. Representative view of present-day development in Tupuraya, now fast disappearing.

— the modern age in the form of intensive housing construction is approaching with giant strides. Thus the owner of the plot where I laboured, Señor Don Gustavo Tejada Galindo, had already reared a modern one-family residence on his land between Avenida America and Camino a Sacaba.

The site examined formed part of a level farmfield south of Camino a Sacaba (cf. folded Map 1: B) and enclosed by an adobe wall. Some trees stood here and there along the wall. The south portion having



Fig. 2. Truck garden about 100 m east of examined dwelling site, Tupuraya, which formerly may have had a similar appearance. Note levelling of field to facilitate irrigation.



Fig. 3. The adobe-pit, Tupuraya. The examination concerned the practically untouched area in background.

been in use for some years as adobe-pit, only the northern section was now tilled (Fig. 3). The approximate location of the metre-deep pit, extending over the greater portion of the enclosure in the south, is marked with a dash line on folded Map 1: B. The angle formed by the wall in the south should roughly correspond to the southern limit of the residual section. The fact is that the terrain, south of this wall, starts to slope towards the river, at first somewhat steeply and then more gently. Presumably the residual soil extends also into the adjacent patch to the west.

In the course of the adobe-making a number of sherds and vessels of Tiahuanaco character had been come upon. In 1948, via a Cochabamba friend of mine, Señor Don Luis Kraemser, I was tipped off with regard to these discoveries, his information thus proving the immediate reason for my undertaking. An essential contributory cause was my desire to attempt a clarification, by means of research in the Cochabamba area, of certain problems arisen in connection with the publication of Erland Nordenskiöld's collection from Mizque Valley. A volume dealing with this collection, ready for the printer at my departure from Sweden in 1951, was duly published (*Rydén* 1954) irrespective of the results obtained in course of the present examination in Tupuraya.

EXCAVATION

The excavation was started as a trench two metres wide and carried forward from the adobe-pit towards the southern wall (Fig. 3, folded Map 1: B). Residual conditions, however, soon prompted a change of direction westwards. The southern edge of the adobe-pit — on the folded Map 1: B shown as a thin dash line — now became the digging's approximate limit to the north while its southern limit was determined by some trees near the southern wall. The heavy line on the folded Map 1: B indicates the approximate extent of the digging when completed.

The initial trench was successively extended southwards as a vertical cut, whereby small portions of the nether section of the face were first removed, this in order to prevent admixture of residue from the 1-m top stratum. The first burials located, it soon proved possible to distinguish two horizontal layers with traces of scorched earth and ashes roughly 5 cm deep. At the same time the method of digging was changed by examining — as later described — a surface of a few square metres stratum by stratum down to the non-residual bottom level.

The upper portion of either ash layer was virtually black, the bottom section more reddish. In accordance with the depth at which found, they are in the following termed the 80-cm respectively 170-cm Layer. With a view to avoiding too much detail, these two layers were not sketched in on the folded Map 1 nor included in the accompanying Cross-sections C 1—2. Both the 80-cm and the 170-cm Layer could be observed all the while as the excavation progressed, although at a somewhat variable depth. They were not continuous, however. This applies in the first place to the 80-cm Layer, the explanation no doubt being that they had been damaged in connection with interments. Thus, at the excavation of Grave Tu 23, it could plainly be seen how the 170-cm Layer terminated roughly 50 cm away from the residual matter. A similar observation could be made also in the case of some other graves, although the condition here was less striking. The 170-cm Layer continued southeastwards beyond the area excavated. Here it was accompanied by a roughly 15 cm deep layer of ashes. Since an

attempt to follow this layer farther southeastwards would have involved the removal of large masses of top soil, no doubt non-residual, while subsequent erosion would have threatened the wall enclosure, only a smaller pocket-shaped extension of the pit was here made in a southeasterly direction with a view to securing additional specimens from the 170-Layer. Some similarly scorched horizontal layers of lesser extent were noted also in other spots above the 170-cm Layer. These, too, like some smaller stones found, have however been left out in the map.

Apart from graves, sherds and some bone fragments, nothing beyond the sherd of a square stone bowl and a fragmentary crescent-shaped grindstone once forming part of a grave chamber was found. In proportion to the size of the pit, the residue secured is scanty yet sufficient to prove the spot to have been not only a burial but also a residential site.

A certain concentration of the residue above the 80-cm and 170-cm Layers could be observed. The only difference between the two layers was, however, the appearance of so-called Chuquisaca Mojocoya Tricolor Ware in connection with the 170-cm Layer and adjoining layers. The 80-cm and 170-cm Layers having been definitely established, commencement was made of the examination of the pit in 50-cm layers — a method which, however, subsequently in part had to be abandoned (cf. p. 17).

Before concluding the excavation, the pit's southern and western portion was carried down to a depth of roughly 1 m under the 170-cm Layer with no graves discovered that could represent the earliest settlement level, nor any additional residue. At this depth the soil was somewhat looser and darker of shade, this due to a somewhat higher moisture content.

Surface Residue (Fig. 4)

Adobe-making, as mentioned, had disclosed the Tupurayan graves. Hence surface residue appeared, even if not abundantly, not only in the adobe-pit itself but also in the area excavated, in the form of sherds of vessels that had been smashed, all this in addition to the residue from the spoliated culture layer. Since such residue complements that from the excavation, some of it is shown in Fig. 4.

Sherds A—E in Fig. 4 represent keros while Sherds F—G derive from flaring-sided bowls. Decoration and workmanship tally with those characterizing the Decadent Tiahuanaco culture. Thus, on Sherds A—C and F, the brown ware is covered by a more reddish coating on both sides while such coating is missing on the inner side of Sherds D



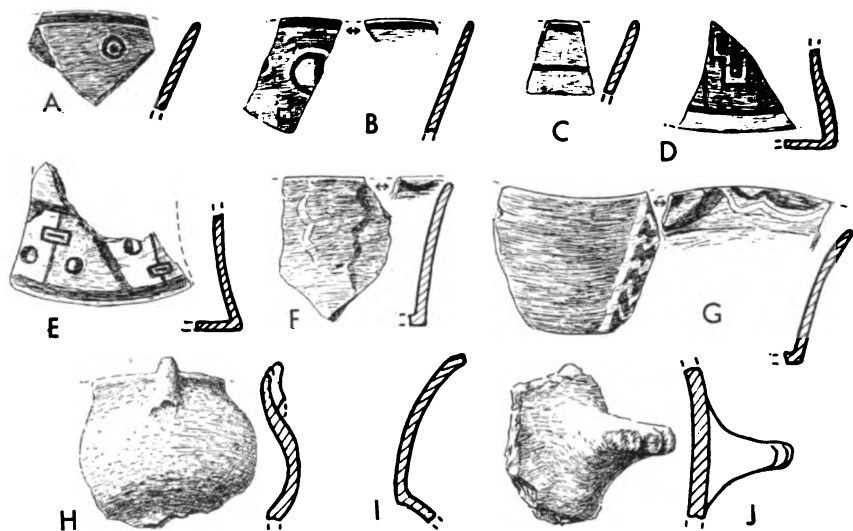


Fig. 4. Surface residue. Tupuraya. 1/4.

and E and appearing only on the upper portion of Sherd G's inner side. On Sherds A, E, F and G, the decorative colours are black-and-white, with orange added on the rest. Thus, on Sherd B, orange surrounds the eye at right, the same shade covering the horizontal field below on Sherd D. Below on Sherd B there is a fragmentary engraved rectangle with traverse lines.

The ware is brown also in the remaining three Sherds H—J. Sherd H seems to be a neck sherd. It shows a more reddish coating on the outer side, its opening diameter being 6 cm. On the rim there is a fragmentary, possibly zoomorphous, boss. The opening diameter of the vessel represented by Sherd I is 12 cm. On the outer side, at the transition between neck and bulbous part, there are traces of a black horizontal line. Like Sherd J, this sherd has a wet-polished outer side.

All sherds from among the surface residue that are dateable from decoration represent the Decadent Tiahuanaco epoch. Sherd J with its trunnion-like protuberance represents an urn parallel to those actually dug up in the course of the excavation, in the first hand then the protuberances on Urn Tu 20 (Fig. 31). All of these specimens were located in a surface position yet inasmuch as the adobe-making also affected deeper residual strata there can be no doubt but that several of the surface specimens are older than what is indicated by their residual position.

That the area examined at Tupuraya represents a residential site is quite likely although not definitely establishable. No traces of any permanent settlement in the form of building foundations or the like could be observed. On the other hand, the soil enclosing the graves showed traces of ashes while also containing sherds and bone fragments. The latter are, however, strikingly few, this no doubt due to rapid mouldering, just like skeletal remains, also in mortuary urns. Thus, compared with Tiahuanaco sites on the Bolivian table-land, a patent disparity is here noted owing to the climate in the Tiahuanaco focal area being considerably drier than in the Cochabamba area. The incidence of cooking-pot sherds and animal bone fragments is what above all prompts designation of Tupuraya as a dwelling site — a mound — with burials. In the Cochabamba country such mounds are called *moros*.

The procedure followed here was left to be decided chiefly by the state or condition in which each grave was found. Keeping to a given level while the pit was successively deepened almost invariably proved unfeasible. Immediately upon location of some intact vessel indicating the presence of a grave, the pit had to be widened and carried around the object, frequently also at a level other than the residue. When it proved impossible to examine the soil stratum by stratum with the object of collecting residue according to residual levels, the method was instead adopted of noting, in the first place on sherds furnishing data as to decoration and shape, the exact depth at which the object had been located. Out of these specimens the main part of those is shown in Figs. 5—6. The rest was recovered during the examination stratum by stratum (cf. p. 15).

Pit Residue (Figs. 5—6)

0—50 Cm

Sherds A—E in Fig. 5 are no doubt of modern manufacture. The fact is that workmanship and shape correspond to those of vessels nowadays used by the Aymara in the upland as also by the Indians in the Cochabamba area. The ware is light-brown; on Sherd A the surfaces are polished while the inner sides of Sherds B—D and the upper side of Sherd E show traces of the brown or greenish glazing found on modern vessels of Indian manufacture in Bolivia. The opening diameter of the vessels represented by Sherds A—C has been 20—30 cm. Sherd E represents a lid with a 10-cm diameter.

Sherd F, judging from decoration and shape, derives from the neck

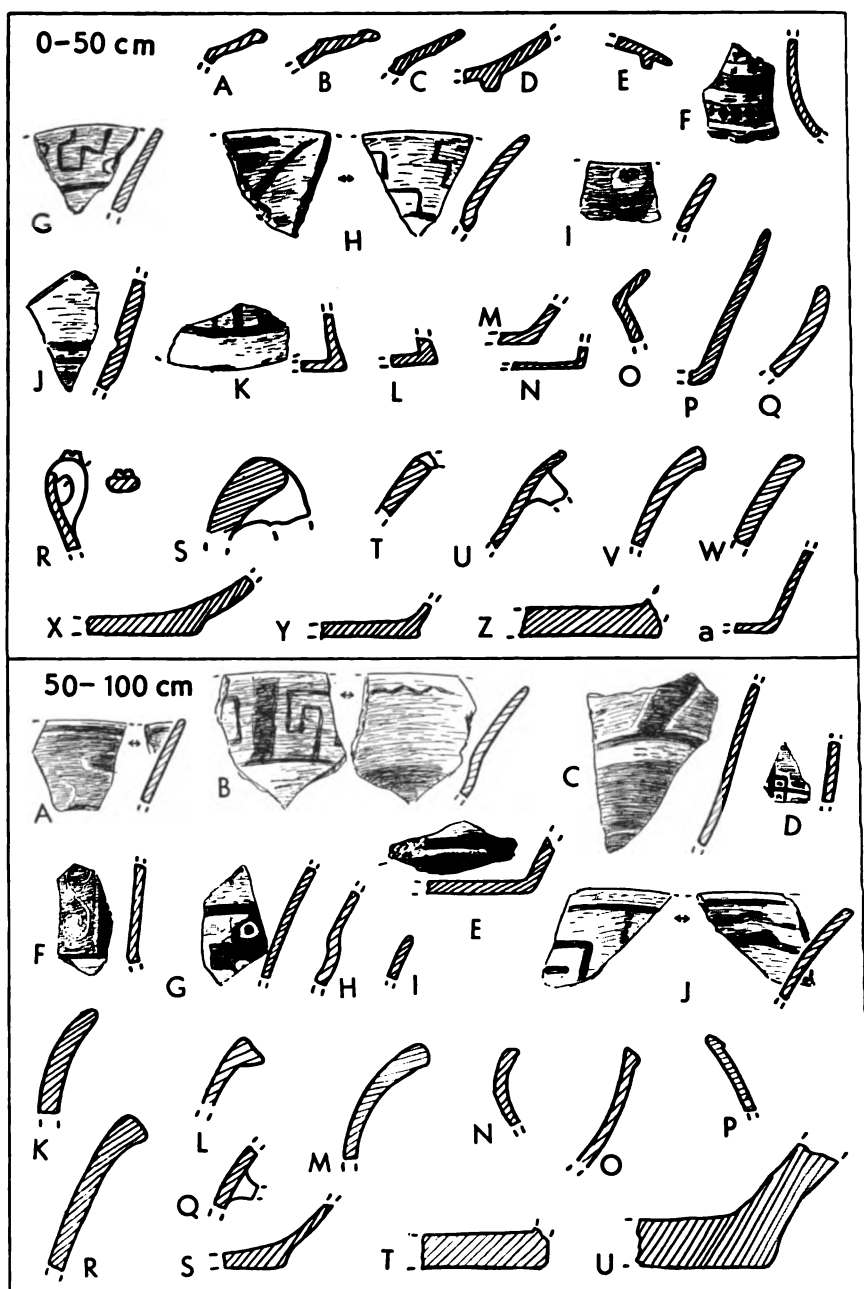


Fig. 5. Pit residue. Tupuraya. 1/4.

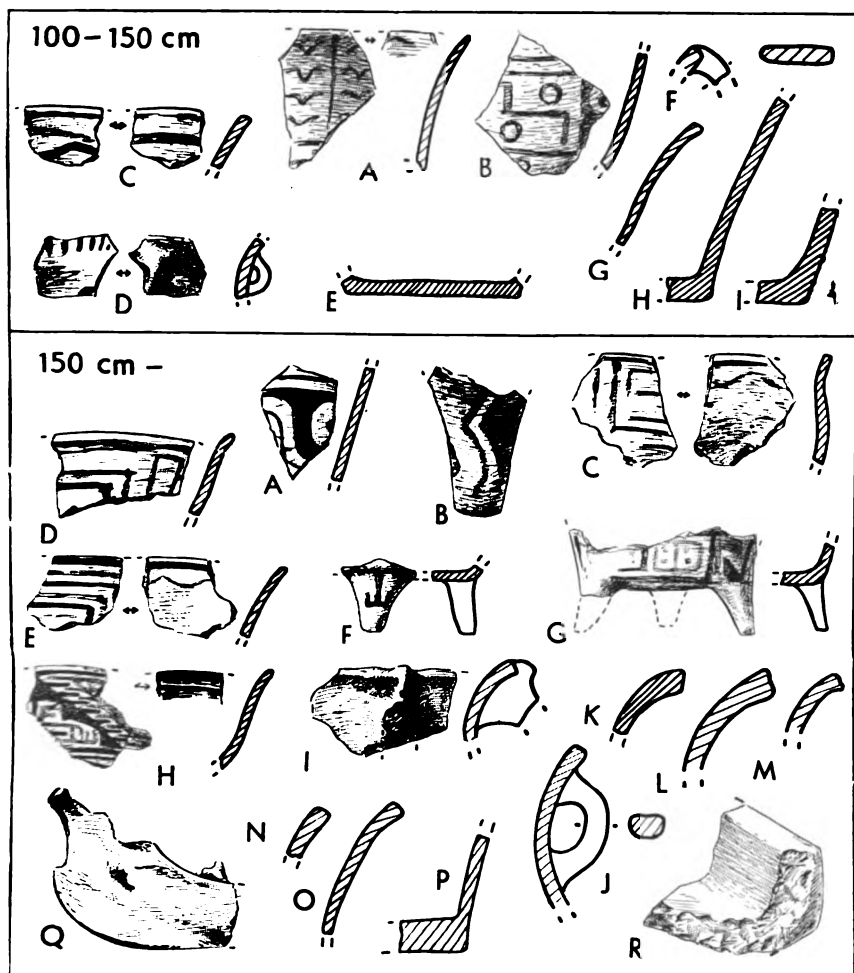


Fig. 6. Pit residue. Tupuraya. 1/4.

of an Inca aryballus. The ware is brown; on the outer side there is decoration in black-and-white and orange, the latter shade farthest down. The brown coating on the outer side appears as foundation shade in the horizontal stripes with black squares.

As to Sherds G—L, the Tiahuanaco origin is patent. These sherds represent keros, Sherd L such a specimen of grey ware with polished outer side (cf. pp. 70—71). The ware of the rest is brown, but only on Sherd K can be noted a coating of a shade more reddish than the ware. On Sherds

G—J the decorative colours are black-and-white, on Sherd K in addition probably also orange in the horizontal field farthest down. On Sherd J the ridge on the outside corresponding to the horizontal groove on the inner side is unusually broad — something often noted in the case of keros from the focal area. The ware in Sherds M—Q is identical with that of Sherds G—K. On Sherds O and P there is a reddish coating on the outer side and the top part of the inner side; for the rest the surfaces of the sherds are polished. The opening diameter of the vessels represented by Sherds O—Q is 20—25 cm.

Olla ware (cf. pp. 67, 81) is again met with in Sherds R-a. It is more greyish-brown in Sherds R, U and V. The outer side of Sherd Y is black and shows plainly the effects of fire. The opening diameter of the vessels represented by Sherds R, V and W is 20 cm, for S and U 30 cm. On the upper side of the ear on Sherd R there is a boss with cruciformly incised lines.

50—100 Cm

The Tiahuanaco influence is even more patent in the case of Sherds A—I from the 50/100-cm level. Sherds A, C—D, F—I represent keros, B an open rim bowl, and bottom Sherd E a flaring-sided bowl. Sherds C and G also represent the funnel-shaped kero type characteristic of the Cochabamba area (*Bennett 1934 p. 408 Fig. 17*). The decoration is in black on Sherd E, black-and-white on Sherds B, C, F and G. Besides black there is orange on Sherds B, C, F and G. Thus the virtually L-shaped field at right on the outer side of Sherd B may have been covered with orange just like the horizontal stripe in the centre of Sherd C, the vertical line in the centre of Sherd F and the circles on Sherd G. The outer side of all of Sherds A—H has a coating of a more reddish shade than the ware, this coating also present on the inner side of Sherds A—B and E. On Sherd D it has an almost reddish-violet tinge. Sherd I is grey ware.

Sherd J is the first representative of the Chuquisaca Mojocoya Tricolor Ware (cf. pp. 68, 84, 117), a type of ware concentrated to the bottom stratum in Tupuraya but possibly with the exception of Vessel Tu 10: 1 (*Fig. 17: 1*) not encountered among intact vessels representing graves. The ware in this pottery is buff; the surfaces are fairly well polished and coated white; the decoration is in black and brown — all characteristics that are found on Sherd J. The type of vessel most commonly prevalent is a tripod bowl. Sherd J probably represents such a bowl which has had a diameter of about 20 cm.

Sherds K—U are of olla ware. Strikingly crude ware and workmanship are featured by Sherds K, and R—U. On Sherd P the outer side is heavily blackened. The shade of the ware in Sherd L tends to light-greyish. The opening diameter is 20 cm for the vessel represented by Sherd P, 25 cm in the case of Sherds K, M, N, O, and R, 40 cm in the case of the vessel represented by Sherd L.

100—150 Cm (Fig. 6)

Among the shown objects from the 100/150-cm level, bowl Sherds A and B definitely represent the Tiahuanaco culture. The same probably applies to Sherd D. Because of its plainly rounded bottom, Bowl B has had a remarkable shape. The ware is brown in Sherds A—B, D—G, the surfaces covered by a more reddish coating. On Sherds A, B and D there is decoration in black. The opening diameter is 15 cm in the case of A, somewhat larger in the case of F and G.

Sherd C here represents the Chuquisaca Mojocoya Tricolor Ware. The decoration is in black and brown on a whiteish coating on the inner side, in black alone on the outer side. The sherd derives from a bowl with an opening diameter of 12 cm.

Fermentation or water jars are represented by bottom Sherds H and I, both of light-brown ware and with polished outer side.

150 Cm and Deeper

The brownish ware and the more reddish coating on the outer side are found on the Tiahuanaco Sherds A and B. The decoration is in black on A, in black-and-white on B, these besides representing the typical funnel-shaped Cochabamba kero.

Sherds C—G and probably also Sherd H are representatives of the Chuquisaca Mojocoya Tricolor Ware, the lot representing a bowl shape, F—G the tripod type. The decoration on the white or ochre coating is in black and brown. The opening diameter, where determinable, is 15—20 cm.

The coating of Sherd H is strikingly orange-tinted, the decoration is in black and red-brown on the outer side, in black alone on the inner side. Again, the decoration shows a design divergent from that generally found on the Chuquisaca Mojocoya Tricolor Ware, thus suggesting that this sherd as well as the corresponding sherd found at Cayhuasi near Oruro (Fig. 55: D) might represent a variant of the Chuquisaca Mojocoya Tricolor Ware. A similar decoration is seen on a Chuquisaca Mojocoya Tricolor vessel depicted by *Ibarra Grasso* (1957 p. 458).

Sherds I—P are of olla ware, in Sherds L—P of more light-brown shade, in P strikingly coarse. The opening diameter in the case of the vessel represented by Sherds M and O has been 20 cm, by Sherd K 25 cm, I 30 cm, and J — largest — 40 cm.

Bone implement Q, made of a llama jaw, has probably been used as scraper or matrix in pottery-making and shows traces of wear not only below but also on the fracture surface at right.

Object R derives from a rectangular stone vessel of a fine-grained blueish-grey rock species.

Perhaps some stray discoveries of one or more vessels later described should have been accounted for in this context, there being indeed nothing to show that these specimens are mortuary residue. On the other hand, several of the sherds now classified as pit residue might be remnants of one-time mortuary ware spoliated in the course of making new graves, whereby the rest of the mortuary ware has been spared destruction. However, in the following I have preferred to let such intact stray specimens represent graves even if not associated with skeletal remains, such remains for that matter missing throughout the entire lot of burials.

Thus, a general survey of the sherds found while examining different strata of the pit reveals that in surface position we encounter partly sherds of post-Columbian and modern manufacture (Fig. 5 0—50 cm: A—E). One sherd represents Inca ware (Fig. 5 0—50 cm: F). The occurrence of Inca ware is not surprising since the native population of the Cochabamba area to this day preponderantly consists of Quichua, descendants of those Mitamaes brought in by the Inca to supplant the original Aymara population, these latter represented by the Tiahuanaco specimens — the bulk of the Tupuraya collection (cf. *Ibarra Grasso* 1957 a p. 236). In the nethermost of the strata examined one notes a number of sherds — the Chuquisaca Mojocoya Tricolor Ware (Fig. 6: 150 cm and Deeper: C—H) — representing an alien feature, perhaps trade ware. Two sherds, as to decoration however not quite as typical, hail from some more near-surface stratum (Fig. 5 50—100 cm: J, Fig. 6 100—150 cm: C). Apart from its painted decoration diverging from the Tiahuanaco ware, this alien ware is characterized by having as its most typical shape a virtually semi-spherical tripod bowl. This latter fact prompts us to seek its origin, alternatively the impulse to it, in the east. However, both in the case of

Tupuraya and Cayhuasi, this sort of specimens are so numerous as to suggest their makers having been residents of the spot. Insofar as concerns the Tiahuanaco ware, no direct intrusion of the Classic decoration or vessel shapes is noted. Thus, in contrast to some of the vessels from the burials examined, the sherds located represent the subsequent Decadent Tiahuanaco era — a period which, however, represents the maximal diffusion of the Tiahuanaco culture and its influence.

GRAVES

Tu 1 (Figs. 7—8)

Large-size burial urn (a) found standing somewhat north of the limit of the area from which material had been taken for adobe-making, marked by dashed line on the folded map. The urn had flat bottom and was made of coarse brownish ware with polished but rather rough outer side.

Over the opening lay two slabs which, however, did not cover it entirely (Fig. 7). The earth pressure had been so heavy that when the covering slabs were turned imprints of the rim were noted on their undersides in the form of ceramic dust spots. The earth layer now lying over the urn isn't likely to have exerted such a powerful pressure — indications are that the covering earth layer had been considerably deeper than at present also in the area where no adobe material had been taken. Approximately 15 cm above the covering slabs could be noted a stratum of scorched earth — the first indication of the 70-cm Layer.

In this urn the following vessels were found:

(1) Funnel-shaped goblet — Cochabamba-style kero shape (*Bennett* 1934 p. 408 Fig. 17) — with painted decoration in black-and-white on the outside. The white in form of two horizontal lines right around, the uppermost immediately under the rim, the other between the two black horizontal lines below. The painted black decoration diffusive and as to design difficult of establishing. The decoration painted on a red-brown coating. Bottom perforated before firing. The vessel found lying on its side, its opening towards the southwest.

(2) Cochabamba-style kero in shape and workmanship parallel to Vessel 1. Found standing with part of the rim in Vessel 1.

(3)? Flaring-sided bowl of brown ware with poorly polished surfaces possibly having a red-brown coating. The inner side has a more brick-red shade and painted decoration in black. Found standing east of Cochabamba-style Kero 1.

(4) Twin-eared vessel of buff ware with polished outer side. Both ears have a boss on the topside. On one side between the ears there is



Fig. 7. Tupuraya. Tu 1.



Fig. 8. Tupuraya. Tu 1. a 1/12, 1-6 1/4.



Fig. 9. Tupuraya. Tu 2. 1/4.

a boss with an incised zig-zag line. Found lying with opening towards southeast at base of Vessel 2. The ware resembles that of ollas.

(5) Bulbous vessel with cylindrical neck and two ears which, judging from their small size, point to the vessel having been intended for suspension. Of greyish ware with well-polished outer side. Found lying with opening towards northwest.

(6) Flaring-sided bowl found standing above Vessels 4—5 and southeast of Vessel 2 at the same level as this vessel. Surface provided with coating of the same brownish shade as the ware.

(7) Bulbous vessel with flaring neck section and two ears which, judging from their small size, indicates that the vessel was intended for suspension. Outer side covered by red-brown coating with traces of painted decoration in dark-brown black. Dark spots after firing have almost obliterated the painted decoration. Found lying with opening towards northwest east of Vessel 1.

Vessels 4—5 were found at a level somewhat lower than the other vessels. The bottom section of the urn held no objects.

Tu 2 (Fig. 9)

Immediately north of and under some slabs were found one kero (1) and one flaring-sided bowl (2). The slabs might be the remains of a spoliated grave chamber. The earth closest around the objects was



Fig. 10. Tupuraya. Tu 3. a 1/12, 1 1/4.

also stratified, this indicating that it had been deposited in a vacuum, i. e. a grave chamber, in which the vessels had had their places (cf. p. 28 Tu 5).

(1) Kero of very good workmanship and markedly elegant in shape. On outer side a faintly outlined ridge corresponding to a horizontal groove on the inside. Outer side covered by a reddish coating also covering the inner side nearest the rim. On outer side painted decoration in black, white and orange, on inner side a single decorative design in black. When the vessel was found one fragment of the rim lay inside it. The point of one of the slabs had caused this damage.

(2) Flaring-sided bowl of the same fine workmanship as the kero. Painted decoration in black-and-white on both sides.

Approximately 1 m south of the slabs marking Grave Tu 2 there was a broken flaring-sided bowl. This vessel, too, although found at greater depth, may have belonged to the same grave. During preparation of the collection, however, it defied identification. It is indicated on the folded map but not in the accompanying Cross-section C 1.

Tu 3 (Fig. 10)

Burial urn (a) without bottom, found with opening downwards. Ware coarse and brownish, outer side polished but rough.

(1) In the neck section of this urn there was a one-handled pitcher lying with its opening towards northeast. Ware brown, outer side polished. Surface darker down towards bottom on one side. Handle

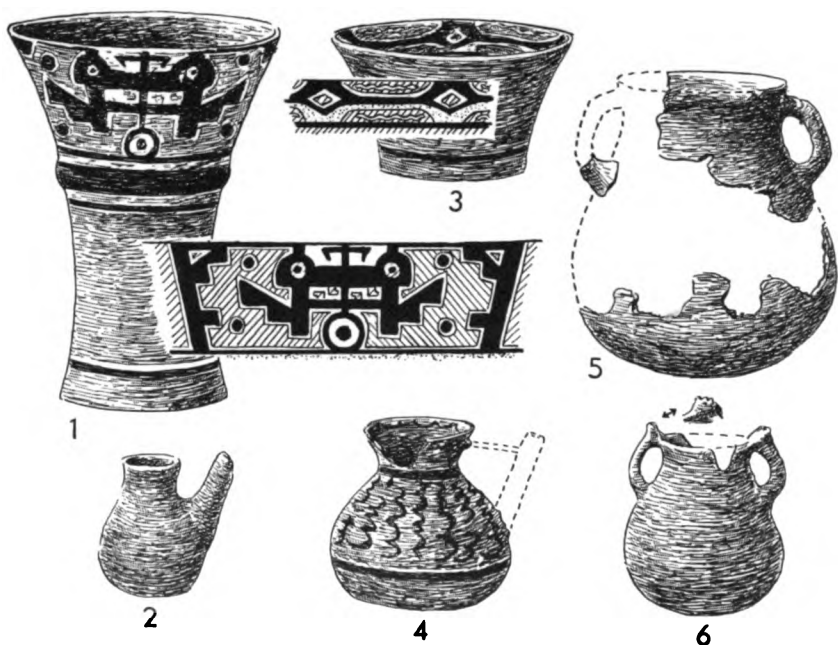


Fig. 11. Tupuraya. Tu 4. 1/4.

with circular cross-section has boss on upper side. On side opposite handle two wart-shaped flat bosses close together.

Tu 4 (Fig. 11)

Immediately west of a number of scattered slabs — possibly the remains of a grave chamber — a collection totalling six vessels was located. Further indication that these specimens originally had lain in a grave chamber was seen in the fact that the earth close by them was stratified and consequently had been deposited in a vacuum, i. e. a grave chamber.

(1) Kero of very fine workmanship with coating of a red-brown shade. On outer side a painted bird design in white, black, grey and orange, the latter colour in the form of a horizontal line above and below ridge marked in black and corresponding to a horizontal groove on inner side. The decorative bird-like design, shown in the schematic drawing, is twice repeated right around. This specimen found lying on its side with opening towards southeast, the opening somewhat higher than the bottom.

(2) Small bulbous vessel with drinking-tube, of brown ware and with well-polished outer side. Found lying with opening towards west somewhat east of Vessel 1.

(3) Flaring-sided bowl of good workmanship with painted decoration in black, white and orange on inner side. On outer side decoration limited to a black stripe along the base. Found standing, although leaning, west of Vessel 1.

(4) Bulbous vessel with markedly flaring rim. Had originally drinking-tube, but this now knocked off. A fracture surface shows drinking-tube to have been joined with rim section. Outer side has painted decoration in black-and-white, inside of rim has decoration in black only. Outer side strikingly well-polished and may besides be covered by coating of a shade more reddish than the light-brown of the ware. Found lying with opening towards Vessel 1 and south of same.

(5) East of Vessel 4 were found sherds of an olla of strikingly inferior ware. Material admixed to paste, resembling quartz sand, distinguishable with naked eye as sizable grains in fracture surfaces. Shade of ware light-brown, vessel's wall remarkably thin. Owing to ware's poor quality, part of the sherds fell to pieces already when trying to save them. Additional sherds lost in transit, this precluding restoration in toto.

(6) North of and slightly under Vessel 4 was found another smaller vessel of olla type. The ware of this vessel is better than that of the immediately preceding. Also here the ware is light greyish-brown of shade and with darker surface sections. Boss above ear has some incised lines at an angle to the rim. This vessel, too, was damaged when found, this fact in conjunction with the stratification further confirming the assumption that the entire lot derives from a damaged stone-chamber grave.

Tu 5 (Fig. 12)

Square stone-chamber grave. Walls erected without the aid of clay filling by means of undressed slabs laid horizontally on each other except in the north, where the wall consists of a large slab placed on edge. This slab may mark the entrance to the chamber. Roof of lengthy slabs laid crosswise one by the other over the chamber in east-west direction. Joints between slabs partly filled with smaller stones. The chamber above floor layer described below almost entirely filled with finely horizontally stratified earth whereby one thin



Fig. 12. Tupuraya. Tu 5. 1/4.

lighter tinted stratum was relieved by another somewhat darker. Possibly two such distinct strata might mark a full year, whereby, if so, one of them would mark the rainy season. If two strata actually were deposited during one and the same year, and their depth and the height of the chamber above the bottom stratum are taken into account, it would have taken about 300 years to fill up the chamber. This estimate, however, only tentative. Floor covered by a roughly 10-cm layer of earth with fine white and film-like stripes, possibly textilian residue, these covering some of the vessels found.

During the examination the following specimens were located, all at bottom level:

(1)? Kero found standing in northeast corner. Identification rendered feasible during preparation of collection by similarity of decoration to that of Kero 7. This is in black-and-white, probably also orange, on outer side.

(2) Bowl, in shape suggesting flaring-sidedness. On outer side painted decoration in black-and-white, on inner side in black only. Found, like fragmentary Vessel 4, in sherds in opening section of Flaring-sided Bowl 3.

(3) Flaring-sided bowl with decoration in black-and-white on inner side. Decoration on outer side may have weathered away. Found virtually standing in northwest corner.

(4) Bottom portion of heavily weathered vase. Additional sherds not collectable because of poor condition. All sherds found inside or around Bowl 3.

(5) Flaring-sided bowl found leaning with opening towards southeast south of Vessels 3—4. Outer side has decoration in black-and-white.

(6) Flaring-rim vase found lying by western wall with opening somewhat higher than bottom and facing northeast. Excellent workmanship although surface weathered, in spots so heavily as to make establishment of decoration difficult. This, consisting of a bird design, is twice repeated around the vessel. Decorative colours black, white and orange.

(7) Kero found standing by eastern wall. Surface weathered so that only two decorative colours, white and black, are now determinable. Orange may be included in circle marking animal's eye. Brownish-red coating covers, besides outer side, also top part of inner side.

(8) Small olla of brown ware with polished but rather rough surface, found lying with opening towards northeast in southwest corner.

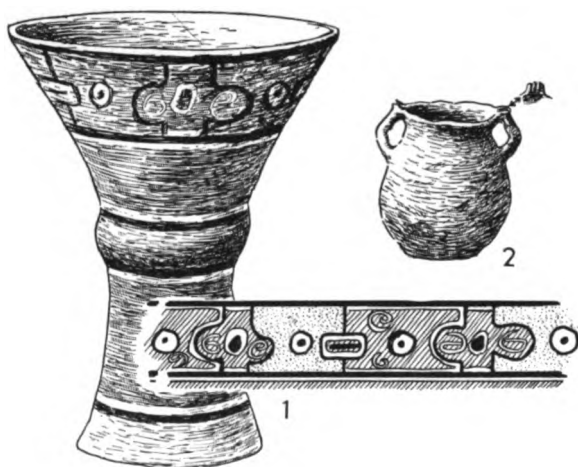


Fig. 13. Tupuraya. Tu 6. 1/4.

(9) Small vase of brown ware with polished, fairly rough surface, found immediately west of Vessel 8 and between this and wall.

(10) Cochabamba-style kero shape found partly in pieces in Kero 11. Decoration on outer side in black-and-white. Orange may once have covered jaguar heads.

(11) Kero with double horizontal ridge on outer side corresponding to two grooves on inner side. Decorative colours are black, white, and grey, possibly also orange (in E-shaped design corresponding to the one marked in grey). Above on inner side a brownish coating which, on outer side, has a more yellowish tint. Found with bottom below Vessels 8—9, its opening higher and facing east.

(12) Rim sherd of apparently a small hollow-base libation bowl, a shape also termed incenser. Heavily weathered. Found by and north of the two following vessels.

(13) Small vase of brown ware. Surface once covered by a more reddish coating now, however, weathered away. Found in southeast corner with opening towards east.

(14) Like Vessel 13. Found east of this vessel with opening towards west.

Tu 6 (Fig. 13)

Two vessels found close by some larger stones, possibly remains of a grave chamber.

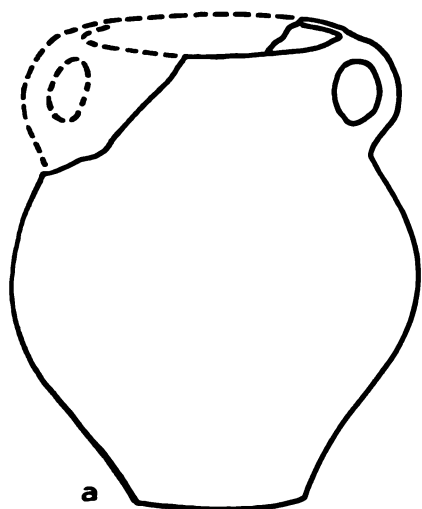


Fig. 14. Tupuraya. Tu 7. 1/12.

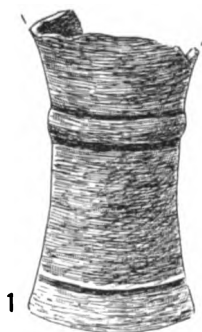


Fig. 15. Tupuraya. Tu 8. 1/4.

(1) Kero found standing with opening slanting east. Painted decoration in black, white and orange, as shown in schematic drawing. Also field nearest bottom is orange-coloured. Red-brown coating on outer side also covers inner side at top. Ridge midway corresponds to horizontal groove inside. West of this kero were found, according to my field-notes, fragments of an adolescent's cranium (s). Nearby also an olla bottom sherd of dark ware.

(2) By the base of Kero 7 there was a little olla of rather coarse brown ware, outer side rather inadequately polished. Rim boss above ear has a couple of traverse incised lines.

Tu 7 (Fig. 14)

Larger urn (a) found standing upright. One of ears missing, but could be identical with a fragmentary ear located. Weight of one of the large slabs east of urn may have broken it off. Urn's ware coarse and greyish-brown, wall about 1 cm thick, outer side rather inadequately polished. Urn held no vessels or other objects.

Tu 8 (Fig. 15)

East of some larger stones in association with cranial remains and some extremital bone fragments of an adult, probably female (s), was found:



Fig. 16. Tupuraya. Tu 9. 1/4.

(1) Kero with no rim, of good workmanship although surface weathered. Decorative colours black, white and orange, the latter in nethermost field. On outer side a ridge but groove lacking on inner side.

Tu 9 (Fig. 16)

Collection of three vessels.

(1) By a one-handled pitcher of coarse light-brown ware with polished rather rough outer side, its opening facing east, were found:

(2) Small olla of greyish-black ware with outer side polished but rough, lying with its opening towards northwest. Vessel somewhat flattened from sides between ears. Above ears a faintly marked rim boss with three incised lines across rim.

(3) Simultaneously a flaring-sided bowl was found lying with its opening pointing more southwest. It has a coating almost red-violet. This covers only top edge on inner side so that ware's brown tint shows in bottom section. Decoration, some weathered away, in black-and-white on both sides.

Tu 10 (Fig. 17)

Sherds of something that seemed to be a larger smashed burial urn were found with Neck Sherds a—b towards south. During the subsequent examination of the Tupuraya collections it turned out, however, that these sherds do not derive from one and the same urn but at least two. The ware, however, is identical. It is of a greyish-brown shade, the wall 1 cm thick — with exception of the aforementioned neck sherds which



Fig. 17. Tupuraya. Tu 10. a-b 1/12, 1-3 1/4.

are thicker at the rim — and outer side polished. Of the best preserved urn there are sherds of the neck section and some of the bulbous section which, at the excavation, were thought to derive from the rounded bottom section. Of the second urn there are only neck sherds preserved. Consequently, it being very problematical whether this grave originally was an urn burial, the urn sherds are not marked on the folded Map 1 and accompanying Cross-section C 1.

(1) Among the bulbous-section sherds of abovementioned urn, a tripod bowl was standing. It is a typical Chuquisaca Mojocoya Tricolor product of light-brown ware and on this painted brown decoration.

(2) Kero with painted decoration in black, orange and white, the white almost weathered away, however, especially in the stripe on top. Found close by the neck sherds of abovementioned urn, its opening slightly slanting against them. The earth stratified close by the kero and above it.

(3) Single-eared vessel located some 75 cm north of above objects. Since it was found, opening facing northeast, at same level as those above, it is quite possible that this vessel, notwithstanding the distance, belongs to the same grave. It is of greyish-brown ware and has a polished surface with black coruscations after firing.

West of the urn sherds and some 20 cm deeper there was a sherd of the same ware as the urn but with thicker wall — no less than 3 cm. About 10 cm below this latter sherd there was still another which at first seemed to be the fragment of a foot but is more probably an ear fragment of the same vessel.

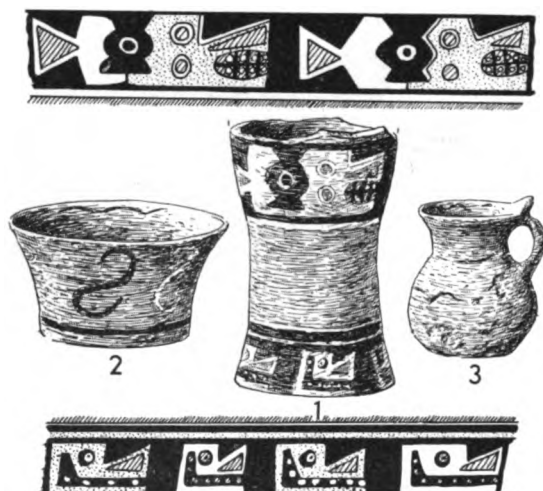


Fig. 18. Tupuraya. Tu 11. 1/4.

The above objects may not all hail from the same grave. Thus, only the kero might belong to that damaged grave to which possibly also the best preserved urn could be counted. The Chuquisaca Mojocoya Tricolor tripod bowl would no doubt have to be regarded as a stray specimen and not as representing a burial.

Tu 11 (Fig. 18)

Three vessels — one rimless kero (1), one bowl (2) and one smaller single-eared bulbous vessel (3) — were found under a stratified soil section, the stratification distinguished with some difficulty.

(1) Kero's decoration in black, white and orange on a red-brown coating. Design shown in detail in schematic drawings. On inner side traces of horizontal groove just in fracture surface. Found with opening facing southeast.

(2) Flaring-sided bowl, decorated in black-and-white on outer side, in black alone on inner side in the form of a wavy line parallel with the rim. Found with opening facing northeast.

(3) Outer side of single-eared vessel severely weathered but even so it can be made out that the brown ware once was covered by a more reddish coating which shows traces of decoration in black. Rim boss above ear. Found with opening facing southwest.

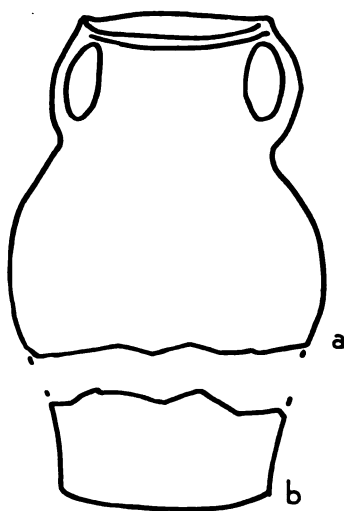


Fig. 19. Tupuraya. Tu 12. 1/12.

Tu 12 (Fig. 19)

Larger urn (a) found upside down. Bottom section knocked off and replaced by lid (b) consisting of bottom section from a similar vessel. Ware in both light-brown although somewhat more greyish in bottom section. Outer side in both cases polished but rough. Wall thinner in bottom section than in preserved upper part. On rim above each ear a faintly marked boss. The urn had no contents.

Tu 13 (Fig. 20)

Earth remarkably loose around the objects but no stratification could be observed.

(1—2) Two flaring-sided bowls lying on their sides, one within the other, their openings towards west. Vessels of good quality with coating of a shade more reddish than the ware. Decoration in black.

(3—4) A similar position held by two Cochabamba-style keros with identical virtually Classic Tiahuanaco decoration. Colours used are black, white and orange, the design — the jaguar head in schematic drawing — thrice repeated on each specimen. Points perforated before firing. The somewhat reddish coating not applied until after vessel's wall had been carefully smoothed.

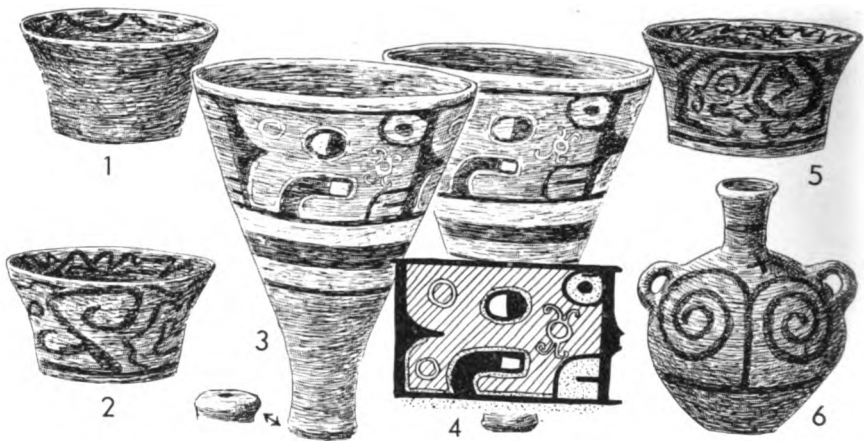


Fig. 20. Tupuraya. Tu 13. 1/4.

(5—6) Under Vessels 3—4 stood Bowl 5, and at base of Vessels 3—4 a small bulbous Vessel 6 with two suspension ears lying on its side with opening towards southwest. Decoration in black. Quality of these vessels comparable to that of Vessels 1—2, and they have the same reddish coating.

Tu 14 (Figs. 21—23)

Neck portion (a) of a larger urn standing upside down. Bottom knocked out and replaced by bottom section of another urn (b). This was placed like a lid over the neck portion. Both sherds of brown ware with polished outer side and 1-cm wall. Below neck on neck



Fig. 21. Tupuraya.
Tu 14.



Fig. 22. Tupuraya.
Tu 14.

portion two trunnion-shaped ears with crosswise incised lines on top. Ware heavier in rim edge. Earth deposit in urn stratified. Earth above and beside grave, as at bottom level of urn, showed traces of having been exposed to fire.

The urn contained the following vessels:

(1) Small olla of brown ware with polished outer side found lying in neck portion with opening towards northeast. Atop ears boss with two crosswise incised lines.

(2) Twin-eared bulbous vessel of finer ware than preceding with its opening towards southwest. Surface polished and probably also covered by brownish coating with traces of decoration in black.

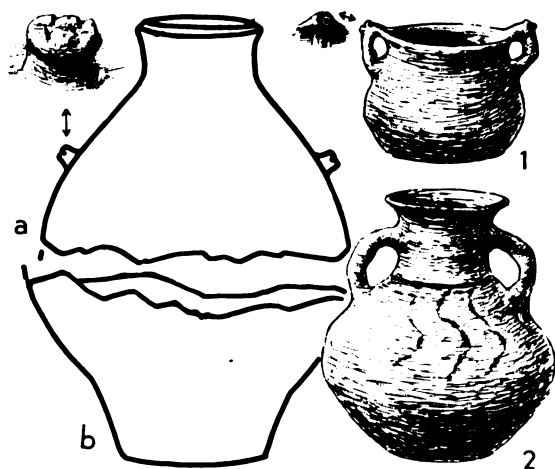


Fig. 23. Tupuraya. Tu 14.
a-b 1/12, 1-2 1/4.



Fig. 24. Tupuraya. Tu 15.

Tu 15 (Figs. 24—25)

Standing urn (a) with neck portion missing. Child burial, judging from size. Urn deposited in a cist or chamber of undressed stones. Stones, however, so close around urn that they perhaps could be termed filling for hole in which urn had been deposited. Slab evidently having

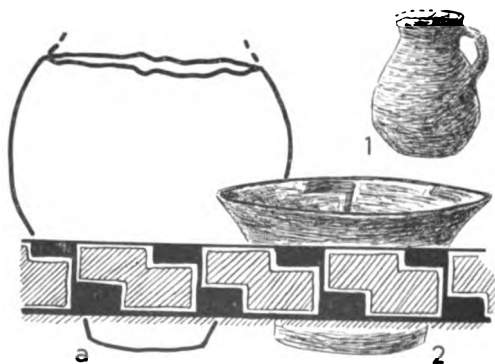


Fig. 25. Tupuraya. Tu 15. a 1/12, 1—2 1/4.



Fig. 26. Tupuraya. Tu 16. 1/4.

lain over urn in east had fallen down in urn, another lay outside in west. Floor in hole consisted of a slab. Earth in urn stratified. Urn of greyish-brown ware with 1-cm wall and polished outer side.

In urn were found at bottom level:

- (1) Small single-eared vessel lying with opening towards north, of brownish ware with polished outer side possibly covered by coating of same shade as ware.
- (2) Flaring-sided bowl found standing, of same ware as Vessel 1 but having brownish-red coating on both sides with decoration in black-and-white on inner side as shown in schematic drawing.

Tu 16 (Fig. 26)

All of the three vessels in this grave were found standing. Immediately west of Vessel 1 there were cranial remains of an adult (s).

- (1) Workmanship of this vessel superb. Bulbous section fructiform, having six vertical segments. Double ear, one larger ear having atop one smaller as rim boss. Decorative colours black and orange on brownish-red coating. The orange may originally have been white.
- (2) Olla of greyish-brown ware with surface sections. Rim boss just above each ear has three traverse incised lines. Outer side polished.
- (3) Flaring-sided bowl with brownish-red coating and decoration in black-and-white on both sides.

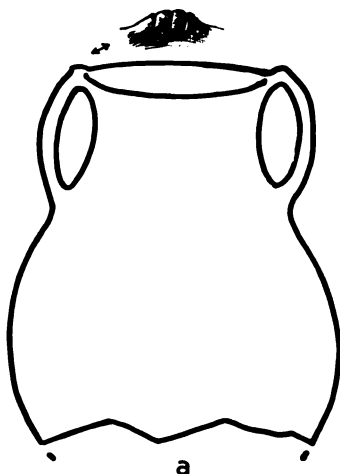


Fig. 27. Tupuraya. Tu 17. 1/12.

Tu 17 (Fig. 27)

Neck portion of larger twin-handled urn (a) found bottom up with opening slanting down towards north. Hole left by knocked-out bottom section covered by slab. Earth deposit in urn stratified. No objects found in urn. Ware greyish-brown, outer side polished. Wall 1 cm in bulbous part, heavier in rim edge. Rim boss with four transverse incised lines above each handle.

Tu 18 (Figs. 28—29)

There were neither slabs nor stratification to indicate this grave which thus consisted of only a heap of pottery of which the first specimen was found isolated about 20 cm south of the rest.

(1) ? Cochabamba-style kero lying with opening towards east. Vessel taken out of the collections and after my departure incorporated with the collections of Museo Nacional in La Paz. Hence the description, based on a pastel drawing subsequently received upon request, perforce will have to be incomplete and faltering.

Decorative colours are black, white, brown, and orange, the latter as foundation on the point under the brown horizontal stripe as well as in a couple of smaller fields in the decorative stripe itself, for instance at bottom of the design, where orange occurs in the small spot to the left of the triangular field with circle and flourish extending down to

the left. Brown occurs in the aforementioned triangular field with circle, the same shade in the decorative stripe while alternating with black in the vertical wavy lines on the point. Either the brown or the orange might be the coating. Perforation of the vessel's point before firing is problematical although likely.

(2) Vase with damaged rim lying with opening towards northwest. Decoration in black, white and violet-brown on brownish-yellow coating. On inner side black line along rim.

(3) Small twin-eared vessel virtually of olla type. Brownish ware, polished surfaces with black coruscations. Boss with two crosswise incised lines on upper side of ear. Found lying by bottom of Vessel 2, opening facing north.

(4) Bowl-shaped twin-eared vessel. Boss with two crosswise incised lines on upper side of each ear. On outer side decoration in black-and-white, surface heavily weathered, however. Consequently, whether this decoration is painted on coating of ware's shade is problematical. Found smashed in opening of Vessel 7.

(5—6) According to notes and working sketch, these two vessels found one stuck into the other and lying with openings towards northwest. However, when going through collections after their transference, one of them — a kero — was missing. Preserved specimen (6) is a Cochabamba-style kero with bottom point perforated before firing. Decoration on outer side in black-and-white. Foundation shade in decorative stripe light-brown, hence such shade also likely for decoration.

(7) Flaring-sided bowl of good workmanship with coating on both sides and decoration in black along rim on inner side. Found lying on edge with opening towards northwest and bottom section inside Vessels 5—7. As mentioned, fragmentary Vessel 4 was found inside this last described Vessel 7. Thus vessels 4—7 were found stuck into one another, the innermost smashed.

(8) Bulbous vessel with cylindrical neck and two small ears, judging from their size for suspension of vessel. Found standing northwest of Vessels 4—7. Polished outer side has an almost black surface section. Decoration in black, possibly on coating of same shade as brown ware. Neck somewhat askew.

(9) Small flaring-sided bowl with decoration in black-and-white on outer side, in black only on inner side. Possibly a coating, surface however uneven. Found standing southwest of, and immediately under, bottom of Vessel 8.

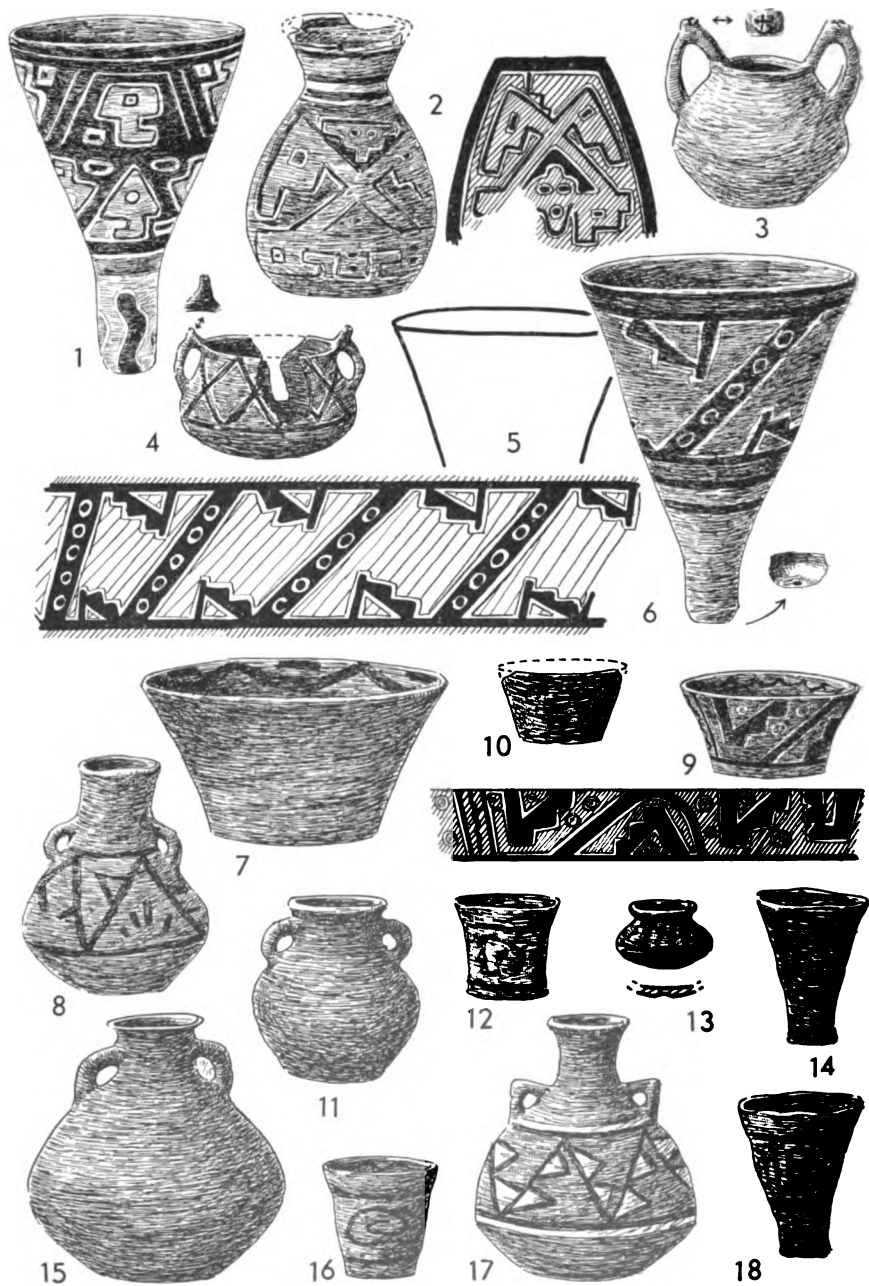


Fig. 28. Tupuraya. Tu 18. 1/4.



Fig. 29. Tupuraya. Tu 18. 1/4.

(10) Larger sherd of small non-decorated flaring-sided bowl with preserved red-brown coating. According to my notes, this bowl when found should have been intact and, according to map, standing west of Vessels 8—9.

(11) Twin-handled bulbous vessel. Ware greyish-brown with darker coruscations in well-polished surface. Found standing at base of Vessel 7. Ware resembles that of ollas but surface treatment corresponds to that of decorated Tupuraya ware.

(12) Small kero of crude workmanship with decoration in black on outer side. Surfaces polished on both sides. Found lying with opening towards northeast, and north of opening of Vessel 2.

(13) Small bulbous vessel with rounded bottom with indentation underneath in centre, found standing north of Vessel 12. Outer side has red-brown coating and painted decoration in black.

(14) Small Cochabamba-style kero found north of Vessels 4—7 lying with opening towards southwest. Workmanship crude, surfaces polished, decoration in black on both sides.

(15) Twin-eared bulbous vessel, judging from size of ears meant for suspension. Ware greyish-brown with dark coruscations in surface on polished outer side. Found lying with opening towards north southwest of Vessel 41.

(16) Small kero of crude workmanship. Outer side polished with decoration in black. Found lying with opening towards southwest just in front of opening of Vessel 15.

(17) Bulbous vessel with two angular ears, judging from their size meant for vessel's suspension. Decoration in black on inner side of neck, in black-and-white on outer side below ears. Outer side possibly having coating of a shade somewhat more reddish than ware's brown. Found lying north of Vessel 14 with opening towards north.

(18) Small Cochabamba-style kero found standing west of Vessel 17. Workmanship crude, sides polished. Decoration in black on both sides.

(19) Kero found smashed northeast of Vessel 15. Bottom section sherds missing. When preparing collection for publication one sherd proved to have been secured in soil outside northwestern corner of Grave 5. Preserved top section lay with opening towards north. Workmanship markedly superior. Decoration in black, white, orange, latter shade in three-pronged fields with dots and in uppermost of horizontal stripes.

(20) Twin-eared spherical vessel found in sherds immediately north of fragmentary Kero 19. Ear juts out from disc-shaped protuberance slanting upwards from rim and having transverse incised line in upper edge. Since ware is of yellowish shade and black decoration tends to brown, vessel plainly indicates firing failure. Besides black also white has been used in decoration. Outer side polished.

(21) Fragmentary flaring-sided bowl found standing under smashed Vessel 20 and containing Vessel 22. Vessel polished, pulverized rock which has served as temper plainly visible in orange-red ware. Inner side rather coarse. Decorative stripe along rim.

(22) Small bulbous vessel with two small ears found lying in Bowl 21 with opening towards north. Outer side polished and may have had coating of same shade as ware.

(23) Small kero found lying north of Vessel 17 with opening towards southwest. Of miniature keros located in this grave workmanship here is best. Outer side and top part of inner side have coating on which decoration in black.

(24—25) Both of these vessels — 24 might be only a sherd deposited in the grave — were found in heavily weathered condition east of Vessel 23. Outer side of bottom section 25 — from a small bulbous vessel — may have traces of a coating. For the rest, weathered ware is brown and brittle.

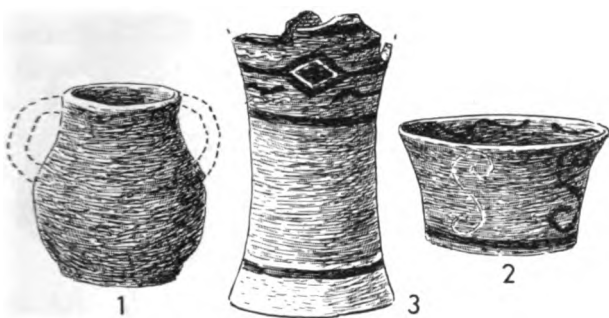


Fig. 30. Tupuraya. Tu 19. 1/4.

(26) Fragmentary twin-eared bulbous vessel. On upper side of preserved ear boss with crosswise incised lines. Similar protuberance on one side of vessel corresponds to another wavy one on opposite side. Ware brown, outer side polished. Found in sherds northeast of Vessels 24—25.

Tu 19 (Fig. 30)

(1) Under a slanting slab was found a small vessel of olla type of greyish-brown ware with black outer side. Surface somewhat rough. Both ears missing. Stood leaning with opening towards north so closely by slab that this latter once may have covered it by way of lid.

(2) In east below lower corner of the same slab stood a flaring-sided bowl with decoration in form of six S-shaped figures on outer side alternately in black and white. On inner side black wavy line below rim.

(3) Bottom section of damaged kero found northeast of slab and in a position somewhat more near-surface than slab, i. e. over its elevated part. Whether this specimen belongs to same grave as Vessels 1—2 is thus problematical. Reddish coating below covered by orange. Above black horizontal line parallel with bottom edge there has plainly been a line in white. Midway stripe right around in black, white and orange. Thus lower horizontal wavy line in orange.

Tu 20 (Fig. 31)

Large burial urn of coarse brown ware with polished though rough outer side found standing upside down. In lieu of ears two sturdy protuberances with traverse incision (cf. detail figure in Fig. 31: a).



Fig. 31. Tupuraya. Tu 20. a 1/12, 1-5 1/4.

Entire bottom section missing. Hole covered by slab. Contents as follows:

(1) Single-eared bulbous vessel found lying upside down 20 cm under covering slab. Ware coarse brownish with smooth outer side covered by coating. Decoration on outer side in black-and-white, on inner side in black only along rim. The white rather yellowed.

(2-3) Slightly lower, i. e. in neck, two keros were first found lying with openings towards north, Cochabamba-style Kero 2 inside Kero 3. Cochabamba-style Kero 2 has painted decoration in black, orange and white on outer side, latter colour between two horizontal stripes below. Design repeated twice around. Owing to an oversight no note was made prior to this specimen's acquisition by La Paz museum whether

foot perforated before firing but this may actually have been the case. Kero 3 has decoration in black, orange and white, design twice repeated.

(4—5) In front of keros and on same level there was a small olla (4) lying inside a flaring-sided bowl (5), both vessels with openings towards east. Olla of dark-brown, almost black, ware. On ear bosses some incised traverse lines. Flaring-sided bowl missing when collection checked.

Tu 21 (Fig. 32)

Under a heap of larger stones (cf. folded Map 1), one of which was the half of a crescent-shaped grindstone (cf. folded Map 1), a number of vessels were found. The stones may have been the tumbled-down roof over a hole in the ground. First were found, under and among the stones in no relative order, a number of sherds of a larger specimen (a) suggesting olla type. The ware is brownish and coarse, the outer side polished. Of this vessel there is more preserved than what appears from Fig. 32: a yet it isn't complete, this perhaps due to loss of some sherds in transit and during repacking in La Paz. The specimens subsequently located could scarcely have any connection with this smashed vessel since among the sherds there are also such as are of the same ware yet do not belong thereto.

Under the stones and partly covered by a layer with fine white filmy streaks corresponding to that in the bottom layer in Tu 5, the following vessels were found:

(1) Small bulbous vessel lying with opening towards south. Greyish-brown ware with polished and fairly smooth outer side.

(2)? Cochabamba-style kero. On coating painted decoration in black, white, grey and orange-brown. The grey in one of E-shaped fields. The other orange-brown just like broad horizontal stripe between black lines below. White in form of narrow edge lines as well as in square and two triangular fields forming vertical line in centre of decorative stripe. Bottom may have been perforated before firing but this impossible of establishing since specimen taken over by La Paz museum after my departure. Found lying south of Vessel 1 with opening towards east.

(3) Kero with double girdle having however no corresponding grooves on inner side. Greyish-black ware with lighter grey coruscations. Surface partly weathered. Found lying southwest of Vessel 2 with opening towards northwest. This kero is the sole intact grey-ware vessel found at Tupuraya.



Fig. 32. Tupuraya. Tu 21. a 1/12, 1-13 1/4.

(4) Vessel of olla type found smashed southeast of Vessel 2 with opening towards south. Slightly flattened from sides having ears, of which one missing. Traverse incised lines on boss above ear. Wall strikingly thin, ware greyish with sooty black outer side.

(5) Small bulbous vessel with two small vertical ears. Found lying

about 30 cm east of Vessel 4 with opening towards northwest. On brown coating decoration in black, same design on both sides.

(6) Kero found lying south of Vessel 5 with opening towards northwest. Excellent workmanship. Decoration in black, white and grey, with orange once possibly included. Design twice repeated round vessel with orange and grey exchanging places in large E-shaped field. Orange may also have been an element in horizontal line between two black ones farthest down in decorative stripe.

(7) Disc-shaped lump of brittle greyish ware found south of Kero 6. In consistence suggesting adobe but seems to have been fired. Lid to Paint Pot 8?

(8) Mortar-like earthenware object found immediately east of Object 7. Paint Pot? Could Object 7 possibly be lid to this object?

(9) Flaring-sided bowl found lying south of Vessel 4 with opening slanting towards northeast. Ware brownish. Decoration in black-and-white on inner side. Traces of decoration in black on outer side. Of decoration here only broad horizontal stripe near bottom is determinable.

(10) Identical with Object 8. Found west of Objects 7—8.

(11) Fragmentary semi-spherical bowl, judging from preserved sherd having probably once had two ears. Found smashed in Bowl 13. When found heavily weathered, hence difficult of gathering since ware cracked on touching. Traces of decoration in black on outer side.

(12) As to shape and workmanship identical with Object 8. Found among sherds of Vessel 11.

(13) Flaring-sided bowl found south of Vessel 3 with opening slanting towards northeast. Decoration in black on inner side.

Tu 22 (Fig. 33)

Four vessels, two of them incomplete, were found together south of, and at the same level as, two large stones, this perhaps indicating that it is here a case of a spoliated cist. However, insofar as concerns the surrounding soil, no stratification could be observed. Above, but partly among, the fragmentary Vessels 1—2 and Vessel 4, traces of something resembling stratified bark (cf. *Bennett* 1936 Grave AR—1 A p. 343 etc.) was noted. Simultaneously some trifling skeletal remains were found (s). Quickly crumbling in the air, none of this material proved collectible.

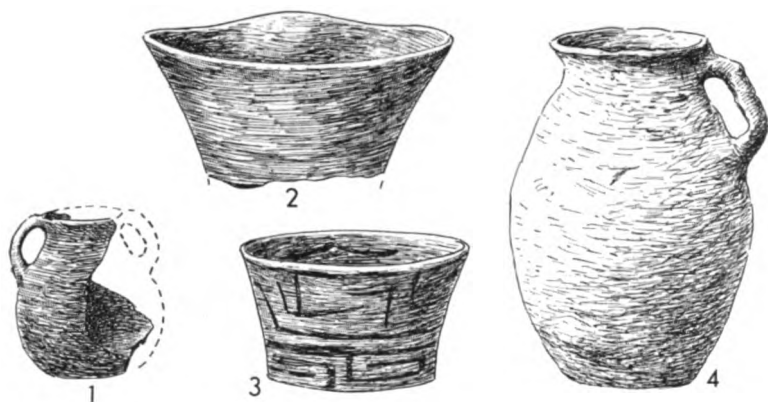


Fig. 33. Tupuraya. Tu 22. 1/4.

(1) The vessels first located (1—2) were smashed when discovered, nor did they prove complete following restoration. They comprise one half of a small vessel of olla type (1) of brown ware with polished outer side and inner side of rim. Fracture surface on upper side of preserved ear points to an erstwhile boss.

(2) Second fragmentary vessel consists of rim edge of kero of very good workmanship. However, noteworthy is that kero apparently turned out failure when made. Thus one side of rim curves inwards and upwards. Girdle below with decoration in black-and-white and corresponding groove on inner side.

(3) South of the fragmentary Vessels 1—2 there was a flaring-sided bowl with opening slanting northwest. Here brown coating on inner side covers top only. Traces of black decoration on both sides.

(4) Between the fragmentary Vessels 1—2 and Vessel 3 a larger one-handled pitcher of rather crude workmanship, the handle having circular cross-section. Vessel lying with opening towards north. Ware light-brown, surface inadequately polished.

Tu 23 (Fig. 34)

Collection comprising three specimens all found at same level close by some large stones. No stratification noted as regards surrounding soil. Notable absence of 80-cm layer of scorched earth and ashes around these specimens points to grave later than this stratum inevitably damaged when grave was made.



Fig. 34. Tupuraya. Tu 23. 1/4.

(1) Kero first found lying aslant with opening towards southwest. Workmanship excellent. On outer side decoration in black and orange, possibly also white in thin border lines of horizontal black-and-orange stripes. Midway girdle corresponds to groove on inner side.

(2) Vessel suggesting a vase with flat bottom and tapering towards opening facing northeast found immediately southwest of kero. Workmanship crude. Ware brownish except in bottom where it is greyish. Outer side rough. Crude workmanship accentuated by a somewhat irregular shape.

(3) Flaring-sided bowl lying on its side with opening towards west immediately southeast of kero. Workmanship excellent. Decoration in black-and-white on outer side, in black only on inner side.

Tu 24 (Fig. 35)

Collection of three vessels. No stratification noted in surrounding soil.

(1) Flaring-sided bowl of good workmanship lying with opening towards south. On outer side decoration in form of S-shaped design repeated four times alternately in black and white. On inner side large arc-shaped design twice repeated.

(2) Smaller olla-type vessel of brown ware with rough surface turning black in bottom section found standing south of preceding. Three parallel incised lines on bosses on ears.



Fig. 35. Tupuraya. Tu 24. 1/4.

(3) Bulbous vessel with opening slanting up towards south found lying south of preceding. This specimen has a larger ribbon-shaped double-handle, i. e. at its junction with rim there is a boss resembling another handle. Decoration in black-and-white on both sides. As in Vessel 1, workmanship good, surfaces well-polished.

Sporadic traces noted under vessels of layer resembling finely stratified bark, possibly remains of mouldered cloth, not collectible however.



Fig. 36. Tupuraya. Tu 25. 1/4.

Tu 25 (Fig. 36)

(1) Small and in shape fairly spherical vessel found standing. Outer side with large dark spot well polished. Decoration in black-and-white. Vertical cylindrical ears with holes permitting string only point to suspensory use. Immediately north of vessel some occipital fragments of an adult human skull (s).

Tu 26 (Fig. 37)

Collection comprising eight specimens. South of them large fragment of probably adult's femur (s).

(1—2) Flaring-sided bowl and kero, bowl lying in kero's opening, both vessels lying with openings slanting up towards northeast. Like



Fig. 37. Tupuraya. Tu 26. 1/4.

kero, bowl has reddish coating on inner side covering only top part nearest rim. Decoration on bowl in black-and-white, on kero in black, white and orange. Owing to incorporation with La Paz museum collections following my departure no details available as to decoration beyond what is shown by water-colour drawings supplied by them.

(3) Kero found close by and north of Vessels 1—2 in position similar to them. Surfaces now much weathered but very fine workmanship as regards surface treatment nonetheless apparent. Black-and-white sole colours now preserved, bird design twice repeated.

(4) Flaring-sided bowl found lying north of Vessels 1—2 with opening slanting up towards southwest. Decoration in black-and-white on both sides. Design on inner side of rim twice repeated. Strikingly superior workmanship as to surface treatment.

(5) Small bulbous vessel with two tiny vertical ears, judging from their size meant for vessel's suspension. Found standing northwest of Kero 3. Coarse brownish ware with weathered surface.

(6) Small olla of greyish-brown ware with black coruscations in surface found lying immediately north of Vessel 5 with opening slanting up northwest.

(7) Flaring-sided bowl found immediately northeast of Vessel 6 lying on its side with opening slanting up northeast. Decoration in black-and-white on outer side, in black only on inner side.

(8) Kero found lying immediately west of Vessel 7 with opening slanting up towards northeast.

Tu 27 (Figs. 38—40)

Rectangular stone chamber with walls constructed of flat undressed stones stacked atop each other with no mortar used. Roof consisting of two larger and some smaller slabs which, however, did not cover the chamber entirely but left a smaller opening in the northwestern corner. Entire chamber filled with stratified earth just like *Tu 5*. Floor level distinguished by a heap of pottery in the chamber's eastern and southern section. Of these, Vessels 9—10, 14, 18—22, were found on a level somewhat lower than the rest, i. e. under Vessels 1 and 4.

(1) Kero lying with opening towards northeast. Decoration in black, white, orange, grey. Immaculate workmanship places it fully on a par with Decadent and also Classic keros from Central Tiahuanaco. Girdle on outer side corresponds to horizontal groove on inner side. In its opening were found:

(2) Small olla having on both ears a protuberance with incised lines on upper side. Ware brownish, surface rough, probably weathered. On both sides between ears a couple of wart-like bosses with two traverse incised lines. Found inside Kero 1 and in same position.

(3) Small kero with decoration in black-and-white found lying with opening towards northeast and with bottom inside opening of:

(4) Cochabamba-style kero with decoration in black, white and orange, found lying with opening towards east. Taken over by the



Fig. 38. Tupuraya. Tu 27.

La Paz museum following my departure, I am dependent for this description on a water-colour sketch received from them.

(5) Olla of greyish-brown ware and darker, almost black, outer side. One ear partly knocked off. Two traverse incised lines on boss on upper side of preserved ear. Found immediately north of Vessel 3 with bottom section in its opening and facing north.

(6) Flaring-sided bowl found lying on edge immediately west of Vessel 5 with opening towards southeast. Traces of decoration in black on inner side.

(7—8) Kero found partly under Vessels 1—2 with bottom slanting up towards north, Cochabamba-style kero stuck into its opening. Decorative colours on both vessels black and orange, latter possibly white originally. As in case of Vessel 4, Vessel 8 was incorporated with La Paz museum collections, hence no further details available. Perforation of point before firing, although problematical, is probable.

(9) Flaring-sided bowl found standing under bottom of Vessel 7.



Fig. 39. Tupuraya. Tu 27. 1/4.



Fig. 40. Tupuraya. Tu 27. 1/4.

Decoration in black-and-white on inner side, in black and probably also white — thin border line under black line — on outer side.

(10) Small vase of light-brown ware with polished outer side found lying immediately by and north of Vessel 6 with opening towards east.

(11) Cochabamba-style kero found stuck into Kero 12, both vessels lying with openings towards northeast. This vessel differs from Kero 12 by its somewhat more defective workmanship. Brown coating here has rather yellowish shade, black decoration somewhat carelessly applied. Decorative white partly weathered away.

(12) Kero found as stated in connection with Vessel 11. Somewhat weathered surface well polished with decoration in black-and-white on attractive red-brown coating. Decorative design twice repeated.

(13) Small twin-eared vase of brown ware found lying in Vessel 15's opening with opening towards northeast. Darker coating on upper portion of outer side. Judging from size of ears meant for suspension.

(14) Small vase of brown ware with polished outer side and traces of black decoration just under rim. Found lying under and beside Vessel 15.

(15) Cochabamba-style kero. Decoration in black-and-white, probably also orange, latter in jaguar head repeated four times in decorative stripe. More reddish coating on upper portion only on inner side. Found lying on its side with opening towards north.

(16) Small olla of brown ware with polished outer side. Boss with two traverse incised lines on upper side of both ears. Found lying under and at the side of Kero 1 with its opening towards southeast.

(17) Twin-eared vase with brown coating on rather rough surface. Traces of decoration in black. Found standing under Vessel 1.

(18) Handsomely shaped and well-made vase with slender neck portion. Coating brownish-red, decoration in black. Found standing under and somewhat west of Vessel 1.

(19—22) Flaring-sided bowls, one standing in the other when found under and somewhat west of Vessel 1. One side of Vessel 21 seemed over-fired. It fell to pieces when dug out, this fact perhaps indicating that it never had been in actual use. Decoration on inner side of Vessel 19 in black-and-white, in black alone on rest of vessels.

TUPURAYA AS HABITATION AND BURIAL SITE

As mentioned, the area affected by the examination here reported is in all probability a habitation site, i. e. a mound which has successively increased in height. This is indicated by the traces of ashes occurring in the strata examined, the sherds found therein, notably those representing utility ware, i. e. non-decorated vessels of greyish or greyish-brown ware used primarily for cooking, as well as artifacts such as the stone-mortar fragment (Fig. 6: R) and a potter's tool of llama bone (Fig. 6: Q), all of this proving when taken together that the site also has been a place for human activity in the form of daily labour. Add thereto the fragment of a grindstone which, however, may have served as wall stone in a grave (Tu 21). Specimens, apart from sherds, showing that Tupuraya once was a residential section are, however, remarkably few. The same observation could be made by *Bennett* (1936 p. 350) in the case of the Arani mound examined by him in the Cochabamba area. "The mound effect is due to an accumulation of wash and habitation material rather than to artificial construction . . ." This is, however, *Bennett's* description of another mound near Cochabamba called Tiquipaya (*Bennett* 1935 p. 366).

Examinations of contemporaneous sites in the Tiahuanaco focal area south of Lake Titicaca have revealed plenty of bone, in the first place llama (*Rydén* 1947 p. 79, p. 121 ff). In the case of Tupuraya, because of the more humid climate in this area, bone material is remarkably trivial, this also applying to skeletal remains in the graves. Any data shedding light on the form of settlement on the mound are altogether lacking. Thus no traces whatever of masonry have been come upon.

Thus far I have purposely avoided use of the term "grave" in connection with those isolated heaps of pottery found in different spots within the area examined, at different levels and of different sizes, having instead labelled them "Tu 1", "Tu 2", etc. I am indeed not wholly convinced that in each and every case they mark a grave. Of the isolated pottery heaps, the ones located in stone chambers in the pit's bottom stratum (Tu 5, 27) are surely graves even if skeletal remains here are lacking.

connection with some new burial in the vicinity, or, where the grave is more near-surface, in connection with cultivation work in later times. Stratification of the earth filling up the stone chambers as well as the urns in certain instances propinquitous to the pottery heaps (Tu 4, 5, 10, 11, 14, 15, 27) proves that the pottery, when found minus chamber or urn, originally was placed in a vacuum in the ground. A grave chamber then suggests itself. This latter fact, however, may also prove that another form of burial must be reckoned with, viz. simple pit graves where the body was placed in the ground together with the pottery — a hole that subsequently may have been covered by some now mouldered logs or possibly one or more slabs. Graves of this type are obviously apt to collapse, whereby the roof is moved aside. Parallels to such direct burials were found by *Bennett* (1936) at Arani, Tiquipaya and Colcapirhua, especially the first-mentioned. They were, however, bark-lined. On the other hand, he never came across any stone-chamber graves parallel to Tu 5 and Tu 27, nor evidently any urn burials associated with Tiahuanaco ware (*Bennett* 1936 pp. 378—381).

Another type established is the urn burials. In these, judging from their size, youthful individuals may have been buried in most cases (Tu 7, 12, 15, 17). Also when larger urns have been used, and when in such instances even two urns have been employed in the same burial — the top part of one and the bottom part of the other — the urns are nonetheless rather small (Tu 1, 14, 20). The great miscellany of grave furnishings in these latter urns as compared with the pottery found in urns of lesser size and in the stone-chamber graves points, however, to use of the larger urns for burial of adults. A notable fact is that on the whole identical pottery types have found use throughout.

It must be stressed that skeletal remains have not been found preserved in a single burial urn. Nor have any traces of ashes been discovered that might indicate incineration before burial in an urn. A conceivable explanation of the small urns is that they were used for a secondary burial — interment of only the cleaned bones of the deceased together with the mortuary ware. The stratification established in a couple of burial urns shows that they were successively filled with earth after the burial had taken place. In this connection it should be pointed out that *Bennett* (1936 pp. 345—346) during examination of a partially hollow stone cist — a bark-lined tomb — in the Arani mound encountered an urn containing food rests. The urn resembles Tu 15. By this urn the skeleton of a child as well as two bowls were found. For that matter, *Bennett* made a number of similar discoveries without, however, being able to

establish any association with skeletal remains. Hence he labels them "burials with large ollas" instead of "urn burials" (*Bennett* 1936 p. 356). They consequently approach those Tupuraya burials in which ollas have been found as grave furniture although these ollas invariably seem to have been of lesser size.

A general characterization of the Tupuraya mound site would thus make it plain that we are here dealing with a habitation mound — an artificial construction that has increased gradually in height by additional soil being brought to it. These latter additions show the stratification to some extent established in case of the strata examined and the diversities apparent in the case of the sherds located in these strata. In the mound, or *moro*, to use the Cochabamba idiom, the dead were buried either in stone-chamber graves or in burial urns of varying size, possibly also directly in the ground. Adolescents were probably buried in urns but perhaps also in the preceding manner. The absence of skeletal remains precludes an answer to this latter question.

Briefly characterized, the Tupuraya site thus could be termed a habitation mound with burials. That Tiahuanaco settlement at Tupuraya and other spots in the Cochabamba area (*Bennett* 1936) took the form of mound-building is in some measure difficult of explanation. Tupuraya, 'tis true, is located in the immediate proximity of Rio Rocha yet flooding by the river would scarcely have been the reason for it. In that case too plentiful precipitation is a more likely cause. In either case, however, the drawbacks involved could have been obviated by removal a few hundred metres to a slope north of the present habitation site (cf. Fig. 2). Even so, the possibility that the plain itself surrounding Cochabamba in former days was more swampy has to be reckoned with. Thus data exist concerning the draining in Inca times of an earlier lake on this plain (*Morúa* 1946 p. 212, *Rydén* 1952 p. 49). Our knowledge relative to the settlement form in the Tiahuanaco focal area is of the scantiest. However, an indication that it here, too, had mound character is furnished by the dwelling site Cayhuasi dealt with below (p. 86 ff) and by *Bennett's* (1936 p. 413 ff) examinations of Chiripa and Llogheta (*Bennett* 1936 p. 494 ff) as well as additional sites examined in La Paz (*Portugal* 1957 p. 343 ff). Just the same, in the case of the Tiahuanaco focal area, it must be borne in mind that the table-land is much more arid than the Cochabamba area. Connotation of the mounds in the Cochabamba area with the appearance of a similar settlement form in the inundation areas of Mojos in Eastern Bolivia (*Nordenskiöld* 1913) seems less warranted. A mound in the marginal Tiahuanaco focal

area, plainly representing a culture separate from, or earlier than, the Tiahuanaco culture, has been reported by Métraux and Lehmann (1933) at Belén near Oruro.

Theoretically it should be possible to date the Tupuraya specimens merely on the basis of the level at which they were located. In that event, the farther down a specimen was found the older it would be. This applies in the first place to the sherds from the pit itself. As far as concerns the graves — the heaps of pottery and the urns — these, however, were surely never dug equally deep. Hence the chances are that on the occasion of a subsequent burial a grave was dug so deep that it came to occupy the same level as an earlier grave while other graves contemporary with the later burial occupy a higher level. Again, repeated burials in the mound must have been responsible for a certain mixing of the culture strata — the sherd layers being successively deposited while new soil was added to the mound — so that sherds from a later period may have landed at the same depth as sherds of an earlier date. The large number of burials within the small area examined, at least 27, renders this sort of disturbance of the layers so much the more plausible.

However, by studying the relative position of the different graves, establishment of their relative age conditions proves to some extent feasible. Thus, because of its position, Tu 10 must be later than Tu 15 located directly underneath. Tu 5 could scarcely be later than Tu 4, 6, 18, and Urn Grave Tu 7. Conceivable is, however, that the vessel heaps lying nearest Tu 5 are offerings to this grave and thus contemporary with it. Even so, the fact that it is here a case of two separate graves is borne out by the skeletal remains located in association with Tu 6. The same applies to the relations between Stone-chamber Grave Tu 27 and Graves Tu 24, 25 and, to some extent, also Tu 26. Skeletal remains were here located in association with Tu 25 and 26. By virtue of relative positions, a lesser age on the part of Tu 9 relative to Tu 18 must be assumed.

The graves that consequently must be considered the safest starting-points for dating on the basis of level position are the two intact Stone-chamber Graves Tu 5 and 27 as well as the instances where burial has occurred in urn (Urn Graves Tu 1, 3, 7, 12, 14, 15, 17 and 20). Two of the latter, viz. Urn Graves Tu 3 and 17, are likely to have been damaged in the course of subsequent human activity in this area. In the case of the former, parts of the urn's bottom section, eventually also some additional mortuary vessel in the urn, may have got lost. In the

latter case the damage is confined to a sideways shift of the urn without, however, the stone serving as lid having changed position in relation to the urn.

A closer study makes it nonetheless plain that the level at which the different graves are located on the whole reflects their relative age conditions. Account must, however, be taken of the fact that the Tupurayan examination unquestionably touched only on the periphery of the erstwhile habitation mound. For this reason also a stratification sideways as it were must be presumed, i. e. subsequent grave constructions at the foot of the mound — consequently at the same level as the earliest graves in the centre — these later graves then covered with soil, whereby the mound was extended sideways, too. For that matter, grave construction in this manner should have proved ever so much the more convenient. As appears from the following, this explanation is likely to apply to Stone-chamber Grave Tu 27. Many of the decorative details shown by the vessels from this burial are consequently of late date, this fact somewhat at variance with the position of the grave at bottom level.

With the sole exception of Tu 10: 1, the Tupuraya vessels found in graves shows Tiahuanaco character throughout. The painted decoration and, in some degree, also the shape reveal certain disparities according to the level at which the vessels were found and which consequently should have something to do with the age of the different specimens. These disparities are, however, only trifling, the which in turn should prove that the specimens here dealt with reflect only a relatively brief interval of Tupurayan settlement history, i. e. only a minor interlude in the Tiahuanaco epoch of the Cochabamba area. The trivialities of the alterations noted in the matter of decoration and shape could scarcely be interpreted as a sign of conservatism. Everything points indeed to the fact that the Tupuraya specimens in this fashion reflect evolution during, say, a couple of generations only. This impression is strengthened by the fact that the sherds in the culture strata surrounding the graves also give an impression of uniformity. Inasmuch as the nearer-surface graves have suffered as result of cultivation work and erosion, possibly also from the adobe-making on this spot, the Tupuraya specimens for the same reason represent primarily the earliest settlement history hereabouts — beginning with the transition between the periods generally termed Classic and Decadent Tiahuanaco — but also subsequent developments even if not so comprehensively owing to damage to, or obliteration of, the near-surface graves.

In this connection it should also be stressed that the only examinations in the Cochabamba area that could be of value for Tupuraya as objects of comparison, especially from the viewpoint of establishment, are those carried out in 1934 by *Bennett* (1936) and here referred to in several contexts. In this connection, his failure to obtain the necessary facilities for a thorough study of his material is most regrettable. Thus, in publicly presenting his results, he was denied virtually every chance of depicting a single specimen of the lot secured by him but had to fall back on general descriptions. The essence of *Bennett's* field-work concerns a mound at Arani. Here he managed to establish, in the first place on stylistic grounds, three distinct evolutionary phases: Arani I, II and III. Any similar division has not proved feasible in the case of the Tupuraya specimens. These agree most closely with *Bennett's* earliest period Arani I, giving indeed a more uniform impression if seen as a single unit. Again, everything points to the fact that Tupuraya as dwelling site goes farther back in time, i. e. is older than Arani I. For this speak such traces of Classic influence as have proved possible of establishment in the case of Tupuraya (cf. pp. 71, 75, 78) and that the skeletal material is better preserved in the case of Arani, and so forth.

In the Table Fig. 41 the Tupuraya graves are arranged according to the level at which found. The different strata show a depth of .5 m. Also the division of the graves within the same stratum proved to some extent feasible, this explaining why they are not listed in numerical order within one and the same residual stratum.

The destruction to which the more near-surface graves plainly have been exposed is fully apparent from the Table. These graves, compared with those in the bottom strata, are thus strikingly poor in residue. Even so, the fact that on the whole the same types appear in all graves as well as in urn burials and stone-chamber graves is also brought out. As shown by the Table, it proved possible to divide all vessels found into two main groups.

The first comprises vessels with decoration painted, as stated, in Tiahuanaco style throughout. Hence this group has been designated *Tiahuanaco-Decorated Ware*. A divergent painted decoration is shown by a sole specimen associable with a burial, viz. Vessel Tu 10: 1. To this specimen I shall revert.

The second group consists of vessels lacking painted decoration — chiefly vessels of olla shape and ware — and represents pure utility ware, evidently cooking-pots in the first place. This group has been designated *Tiahuanaco Utility Ware*. The possibility nearest at hand, and virtually

the sole chance for dating the vessels in this group is presented by their location in association with Tiahuanaco-Decorated Ware.

A definite line of distinction as between the above two groups proved difficult of establishment in a number of instances. Thus there are specimens having ware very much suggesting that of utility vessels yet with weathered surface, sometimes even showing traces of painted decoration. Since these problematical specimens as regards shape invariably have parallels among the group Tiahuanaco-Decorated Ware, they have been included in this group.

Besides its special shape, the tripod Vessel Tu 10: 1 shows painted decoration divergent from the rest. In the Table this specimen is left to represent its own separate group designated *Chuquisaca Mojocoya Tricolor Ware*. This designation implies that the group represented by this vessel may have originated outside the Cochabamba area. The designation "Chuquisaca" was originally occasioned by a couple of similar specimens in the La Paz museum whose provenance is stated to be the province of Chuquisaca. Subsequently published data on this ware have furnished additional reasons for its present designation (cf. pp. 84, 109, 117).

Figs. 42—47 have been composed with a view to facilitating a closer analysis of the Tupuraya specimens. In this connection the same principles as followed in the arrangement of the Table Fig. 41 have been applied. The vessels are consequently grouped according to the depth at which found. Hence Figs. 42—47 virtually represent the Table pictorially translated whereby, however, certain fragmentary specimens somewhat problematical as to shape and decoration have been left out, this also applying to specimens missing when checking the collections but known from excavation maps and descriptions and reproduced by contour lines in the figure showing specimens from one and the same burial.

It will be noted that a couple of types occurring are also represented by specimens of strikingly minimal size. This applies above all to utility ware of olla-shaped type (Shape 13) and the kero (Shape 1), but also to the funnel-shaped kero characteristic of the Cochabamba area (Bennett 1934 p. 408) — the Cochabamba style-kero shape (Shape 2) — as well as some other types (Shapes 6, 10). These vessels are too tiny to render their practical use conceivable. Also, compared with corresponding vessels of larger size, they show patently poor workmanship. However, inasmuch as they occur in the same burials as these standard-size specimens — thus not exclusively in graves which,

judging from their size, could be suspected to represent child burials — they could not very well be interpreted as toy vessels. Lesser-size copies of, say, aryballus-like water jars are made by certain Chaco tribes when the girls as if in play are going to take part in the work of the grown-up women. As to the Tupuraya miniature vessels of olla type, these are too diminutive to suffice for the preparation of food for a single individual. This applies also to the largest ollas found in graves. Fragments of larger ollas used as cooking vessels were found, however, as pit residue. The outer side nonetheless shows traces of fire action. Hence they may have been used for some special purpose, say, preparation of medicatives. One possible explanation of the olla-type miniatures is that corresponding standard-size vessels were difficult of production, the miniatures therefore left to serve as substitutes for them in the burials. In the Table Fig. 41, as in Figs. 42—47, these miniatures are also arranged and shown separately — their numbers also stated in the Table — under the same designation as corresponding vessels of standard size. Characteristic of the miniatures with painted decoration — this applies in particular to the kero and the Cochabamba-style kero shape — is the Tiahuanaco decoration's patently Decadent form. The poor workmanship shows in the first place by rather inadequate surface treatment but also by a cruder shaping. Keros 6—8 cm high and thus in size corresponding to Tupuraya miniature keros are mentioned by *Bennett* (1934 p. 347) in connection with his examination of the Arani mound.

TIAHUANACO-DECORATED WARE

The ware of the Tupuraya Tiahuanaco-Decorated pottery is identical with that of the corresponding specimens from the Tiahuanaco focal area south of Lake Titicaca — brownish or red-tarnished — while invariably covered by a coating or "slip" of the ware's shade upon which the painted decoration is applied. In the case of the Tupuraya specimens, the colour choice for the decoration is limited to black, white, orange and, occasionally, grey. Except for some designs or patterns plainly typical of the Cochabamba area, to which I shall revert, Tupuraya Tiahuanaco-Decorated Ware shows no divergencies from the corresponding pottery originated in the focal area. Thus, as regards the ware's quality, the exquisite shaping and the conscientious workmanship apparent in surface treatment and painted decoration, Tupuraya pottery is often fully comparable to the pottery of the focal area, this

also including Tiahuanaco Classic prime specimens. In Tupuraya, as in the focal area itself, specimens having approximately the same decoration may at times plainly reveal superior workmanship, at other times inferior. The latter, however, seems to increase progressively with the decoration assuming a more Decadent character, the which also can be shown in the case of specimens from the focal area. The difference in quality and workmanship is also apparent as among specimens from one and the same burial. A similar observation could be made by *Bennett* (1936 p. 357) in the course of his examination of the Arani mound burials. Tupuraya Tiahuanaco-Decorated pottery is thus closely linked to the focal Tiahuanaco area south of Lake Titicaca, hence pointing to an intercourse both intimate and lively between this focal area and the Cochabamba region.

The patent similarity as between well-made Tiahuanaco ware of the Cochabamba section, exemplified by the Arani I burials, and the ware of the Tiahuanaco focal area, and inasmuch as this Cochabamba ware is superior in technique to the Decadent of the focal area but differs from the Classic in style, prompted *Bennett* to suggest, as designation for the well-made Tiahuanaco ware Arani I, "Derived Tiahuanaco" instead of "Decadent". This finding by *Bennett* in the case of Arani applies in even greater measure to the Tupuraya Tiahuanaco-Decorated Ware. To this latter ware applies also to some extent what *Bennett* (1936 p. 360) considers to have marked evolution and the changes in style and workmanship between Arani I and II: "The color combinations are simpler, the designs are broken down completely . . . The general finish of the ware is poorer . . ." This trend, however, in the case of Tupuraya is not plain enough to serve as starting point for relative dating in conjunction with combinations of different burial types, this having been decisive, even more than stratigraphy, for the compilation of *Bennett's* time schedule for Arani. The Tupuraya specimens evidently approach most closely Arani I in view of *Bennett's* (1936 pp. 358, 378) characterization of this phase with no possibility to reproduce the specimens from this period, but, again, the bulk of the Tupuraya collection generally seems to come closer to the Decadent Tiahuanaco ware of the focal area while also earlier than Arani I.

On the residual sites in the Tiahuanaco focal area, a common occurrence is to find sherds of keros or the Cochabamba-style kero shape fashioned in some black or greyish fine ware — "grey ware" or "plain ware" — (*Bennett* 1937 pp. 392, 408; *Rydén* 1947 Table I "Grey Ware") with polished surface. At Tupuraya, a single intact specimen of this

kind was located (Tu 21: 3). It is here subsumed under Tiahuanaco-Decorated Ware, albeit as a separate specimen marked "Gr" among Keros (Shape 1 Fig. 42). A similar absence of vessels of this type seems to exist also in the case of the Tiahuanaco pottery of Mizque Valley south of Cochabamba (Rydén 1956 p. 104). A plausible explanation would be that the raw material needed for the manufacture of this ware does not occur in the Cochabamba or Mizque areas. Discovery of such a mortuary perquisites would consequently prove that we had then to do with a trade specimen. Grey-ware vessels of non-Tiahuanaco shape and origin are found, however, at Chullpa Pampa (Rydén 1952) near Cochabamba, also by Nordenskiöld's unpublicized excavations in the Kaipipendi valley as well as from other sites near the Cochabamba area.

The entire lot coming under the heading Tiahuanaco-Decorated Ware has to be designated libation vessels. This ware was not produced exclusively in connection with burials, this inasmuch as sherds of identical vessel types were found on the habitation mound itself, i. e. in the culture strata surrounding the burials. This proves that the vessels had seen daily use, too, or, perhaps more correctly, had been used as libation vessels on the more festive occasions of everyday life. The same condition can be pointed to in the case of Tiahuanaco and Wancani (Rydén 1947 p. 158).

Represented in all strata, and most numerous so, is the *Kero* (Shape I Fig. 42). It will here be dealt with in conjunction with its variant termed *Cochabamba-style Kero Shape* (Shape 2 Fig. 43). Hence this type of vessel will here serve as starting point for an analysis of the Tupuraya ware, in the first place then the Tiahuanaco-Decorated category.

Any difference in the matter of decoration as between keros of customary goblet-shaped type (Shape 1) and the variant marking the Cochabamba area — the *Cochabamba-style Kero* (Shape 2) — cannot be established.

Insofar as concerns the kero's painted decoration, there are two styles to be noted. One is the reproduction of a zoomorphous theme, the other a geometric pattern. The zoomorphous theme is the feline head — jaguar or puma — in one form or another characteristic of Tiahuanaco decoration. Both styles parallel each other throughout the different residual strata. Reproduction in toto of the feline animal is met with only on Tiahuanaco Classic specimens, as for instance of the kind shown by *Mason* (1957 Fig. 27). On later Decadent specimens one has been content to reproduce the head only. On the Classic

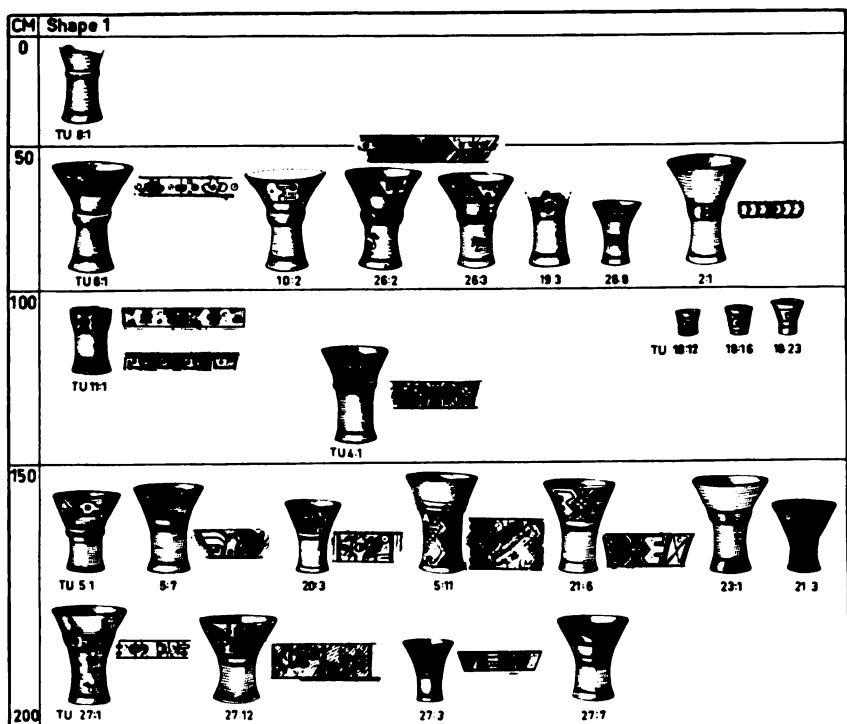


Fig. 42. Table of recovered Keros (Shape 1), Tupuraya.

specimen depicted by Mason, a human head stylized like the feline head on the Tupuraya ware is also noted (Tu 20:3). This should consequently prove that Tupurayan settlement chronologically goes as far back as to Tiahuanaco Classic times. I shall revert to additional proof of the same thing (p. 78).

On the kero, as on its variant Cochabamba-style Kero Shape, is also found the combination feline head-bird motif typical of the Cochabamba area — a decorative theme by me termed the condor-puma motif (Kero Tu 5:1 and 2, Cochabamba-style Kero Tu 27:8).

The condor-puma motif on the two Tupuraya kero types, the same motif on a vase located (Tu 5:6) as well as certain representations of the feline head on specimens from the nethermost strata (Keros Tu 20:3, Cochabamba-style Kero Shapes Tu 5:10, 27:11, 13:3—4) closely approach the Classic decorative style. In the matter of decoration, however, the Decadent trend is plainly noticeable. Feline heads

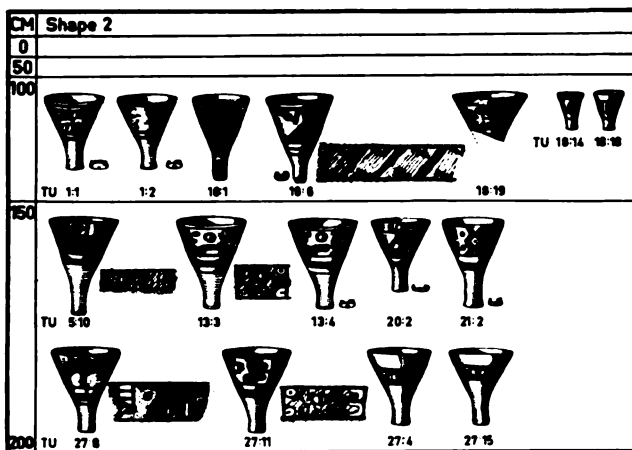


Fig. 43. Table of recovered Cochabamba-style Keros (Shape 2), Tupuraya.

of pure Decadent style are found on Keros Tu 6: 1, 10: 2, 11: 1, 26: 2—3. Thus, as regards decoration on Tupurayan Tiahuanaco-Decorated specimens, we are able to establish an evolution in a Decadent direction progressively more patent as the age of the vessels decreases, i. e. the nearer the surface they were found (cf. Fig. 42).

In a paper dealing with Erland Nordenskiöld's archaeological collections from Mizque Valley south of Cochabamba I have been able to show a style development of the condor-puma motif in Decadent direction (Fig. 48 *Rydén* 1956 Fig. 43 p. 105 ff.). Tupuraya ware with the same decorative motif confirms the evolutionary line established on the basis of Nordenskiöld's Mizque Valley specimens. That the condor-puma motif is typical of the Cochabamba area is also borne out by *Bennett* (1936 pp. 354, 359) stressing it as a characteristic of ware representing Arani I and II. In this connection Bennett also could establish a change of this theme in the same direction as established with the Tiahuanaco ware of Mizque Valley as starting point.

If Stone-chamber Grave Tu 27 is dated on the basis of the painted decoration on the vessels found therein, a certain problem arises. This grave was located in the residual bottom stratum. Certain specimens in Grave 27, the Cochabamba-style Keros Tu 27: 8 and 27: 11, tie on to the Tiahuanaco Classic style in the Cochabamba area while other corresponding vessels, Tu 27: 4 and 27: 15, as well as a kero of the usual goblet-like shape, Tu 27: 1, shows strikingly Decadent style features.

We may here have to reckon with a burial of relatively late date although on the same level as the earliest burials in the centre of the mound. An explanation of this condition has been presented on p.66. This is the reason — simultaneously in order to facilitate comparison with specimens from the stratum above — why the ware from Stone-chamber Grave Tu 27 in the schematic illustrations Figs. 42—47 is shown separately farthest down among the specimens from the 150/200-cm stratum.

A most plausible explanation of the Decadent cubistic design representing the predatory animal head on the aforementioned Cochabamba-style Keros Tu 27: 4 and 27: 15 is that they were influenced by similar zoomorphous designs on fabrics. On fabrics it is difficult to represent crooked lines. Weaving technique itself thus enforces a stylization in cubistic direction, i. e. figures with straight outlines, this plainly apparent from the Tiahuanaco-style fabrics found on the Peruvian seaboard. Similar fabrics are likely to have occurred also in the Tiahuanaco focal area, surely also in the Cochabamba area. The climate, however, is responsible for the lack of such preserved fabrics from the latter areas.

Textilian patterns may also have served as basis for the geometric decoration on such keros as Tu 5: 11, Tu 21: 6, and Cochabamba-style Kero Tu 21: 2. However, the geometric decoration appearing on Keros Tu 5: 11 and 21: 6 as well as Cochabamba-style Kero Tu 21: 2 may very well have originated in the decoration on wooden keros. Such keros are known from northern Argentina (*von Rosen* 1924 Fig. 55). My Bolivian colleague Carlos Ponce Sanginés also found such a kero when examining a Tiahuanaco cist at Mollo, province of Muñecas, Bolivia. The bird motif on Kero Tu 4: 1 shows certain remote similarities to the border decoration on a Nazca poncho (*Schmidt* 1929 p. 481). The purely geometric decoration with stairway motif on Keros Tu 27: 3 and 27: 12 may similarly have to be adduced to textilian patterns.

Kero Tu 2: 1 from the 50-cm stratum has a direct parallel in Kero Tu 23: 1 from 150-cm stratum, and Kero Tu 26: 8 from the 50-cm stratum in Kero 27: 7 from one of the stone-chamber graves in the bottom stratum. This parallel indicates that Stone-chamber Grave Tu 27, its bottom-level location notwithstanding, is of relatively late date. Kero Tu 27: 1 from the same grave with its stylized jaguar heads, and showing unmistakable similarities to Keros Tu 6: 1 and Tu 10: 2 found nearer surface, is an additional argument to the same effect.

The bird motif on Keros Tu 26: 2 and 26: 3 might have to be regarded

as a belated style infusion in naturalistic direction. It recurs on Pitcher Tu 16: 1 (Shape 6) and in the inside decoration of Flaring-sided Bowl Tu 21: 9 (Shape 3). Similar ornithomorphous figures are characteristic of the Inca decoration. However, whether we are here able to trace an influence from this culture I would leave open — the interval between the specimens here treated and the Inca epoch appears too great. The bird motif appears also on Arani II ware (*Bennett* 1936 p. 359) as well as on ware from the Tiahuanaco focal area. Thus a Decadent kero from Isla del Sol in Lake Titicaca shows such a bird figure (*Parrin Pando* 1957 Fig. 44). Consequently it would appear as though the bird as decorative theme was adopted independently by both the Tiahuanaco and Inca cultures.

One feels like regarding the diffuse linear decoration on miniature Keros Tu 18: 12, 16 and 23, and corresponding Cochabamba-style Keros Tu 18: 14 and 18: 18, as climax of a stylistic change in Decadent direction. Here too, as earlier pointed out, we observe the signs of a change, notably poorer workmanship and, in the case of the miniature Shapes Tu 18: 14 and Tu 18: 18, decoration in increasingly Decadent direction. Such an assumption is, however, to some extent gainsaid by the decoration on the rest of the vessels from this same grave. Yet the decoration on Cochabamba-style Kero Tu 18: 1 should mark a step in the same direction. The same condition is reflected by the vessels from Grave 13, where Flaring-sided Bowls Tu 13: 2 and 13: 5 (Shape 3), represent a corresponding evolution in Decadent direction while the decoration on Cochabamba-style Keros Tu 13: 3—4 shows strong Classic style features. Again the occurrence in the same grave of vessels with decoration so dissimilar and presumably representing two different epochs within the Tiahuanaco culture would speak not only for a rapid evolution but also for relative brief duration of both epochs.

Owing to the transference upon my departure, and before I had an opportunity of studying them more closely, of several Cochabamba-style keros to the museum in La Paz, it is by no means certain that all of them are perforated in the bottom before firing. Probably the perforated Cochabamba-style kero was used in the same manner as a *paccha* (*Lothrop* 1956). With the knowledge we now possess regarding this vessel shape, it would appear as though perforation occurs more commonly among the later near-surface specimens. The fact that the Cochabamba-style kero — typical of the Cochabamba area in the first place — frequently is found with its point stuck down into a kero of ordinary type, and that a flaring-sided bowl is found inside a kero,

may indicate use of these vessels in pairs. In 1939 I observed the "sarairi" on Taquiri Island in Lake Titicaca make use, on the occasion of sacrifices to Pachamama in connection with potato-planting, of two calabash goblets when pouring chicha on the ground by way of libation (Rydén 1940 Fig. 435). That seemingly the same sacrifices were performed with two kero-shaped goblets in pre-Hispanic times is also apparent from an illustration by *Poma de Ayala* (1936 pp. 250, 293, 1153). A wooden vessel commonly in use at libation by the Aymara of our days has the form of two bowls, usually intercommunicating by virtue of a hole in the partition near the bottom. *Tschopik Jr.* (1951 p. 242 Fig. 6) claims that these wooden libation double-bowls in the Titicaca area are obtained by trade from either the Quichua of Carabaya or from the region of Cochabamba. Thus the origin of the wooden double-bowls seems to be found in the custom of using two vessels at libations. Their origin in the Cochabamba region and their modern use would indicate that when identical earthenware vessels are found in the same grave in the Cochabamba area they are libation bowls.

The perforated bottom point appears also on occasional Cochabamba-style keros found in the Tiahuanaco focal area (Rydén 1947 p. 40).

Keros and Cochabamba-style keros have been found pairwise in the Tupuraya burials, frequently with identical decoration, this underlining the character of these types as libation vessels. This applies in the first place to the kero and the Cochabamba-style kero. Examples of the former are Vessels Tu 5: 1, 5: 7, 26: 2—3, of the latter Vessels Tu 1: 1—2, Tu 13: 1—4, Tu 27: 4 and 27: 15 and perhaps also Tu 21: 2 and 21: 6, these representing both shapes. The same may apply also to some other types, as for instance Shape 7 Vessels Tu 18: 8 and 17 as well as the flaring-sided bowls, as for instance Tu 13: 2 and 5, Tu 27: 21—22, perhaps also the miniature versions of keros or Cochabamba-style keros (Tu 18: 14 and 18). In the case of miniature versions of the kero shape, it is even possible to establish the occurrence of three specimens of identical type and decoration in one and the same grave (Tu 12: 12, 16 and 23). At the same time, however, in connection with these miniature versions greater variation in decoration as between the specimens from the same grave than in the case of larger types occurring in pairs has to be established.

The most patent divergence in the matter of decoration as between *Flaring-sided Bowls* (Shape 3, Fig. 44) from the bottom stratum and those from the near-surface stratum is the fact that the S-shaped design becomes more common on the later more near-surface specimens. By and

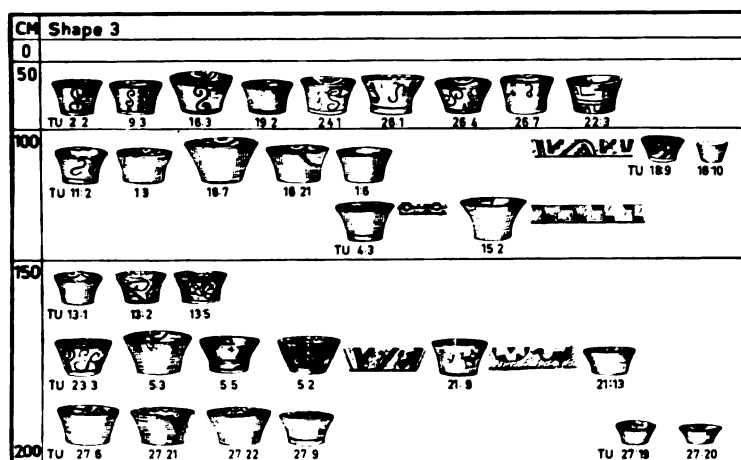


Fig. 44. Table of recovered Flaring-sided Bowls (Shape 3), Tupuraya.

large, to be sure, the decoration on flaring-sided bowls is rather stereotyped compared with that on keros and the Cochabamba-style kero shapes. Thus, with the exception of Vessel Tu 22: 3, the S-design as decoration on the outside recurs on the entire lot of flaring-sided bowls from the 50-cm stratum. On later specimens, a trend towards having the line of semi-circular designs on the inside along the brim turn into a wavy line also becomes apparent. The same condition has proved possible of establishment also in the case of the Tiahuanaco focal area (*Rydén* 1947 pp. 70, 157, 160). The diffusive linear decoration on the Cochabamba-style Keros Tu 1: 1 and 2, marking the climax of the Tupuraya kero's evolution in a Decadent direction, is paralleled on Flaring-sided Bowls Tu 13: 2 and 13: 5. It must be noted, however, that these latter specimens derive from a grave lying deeper than the urn in which the two corresponding Cochabamba-style keros were found. The aforementioned two Flaring-sided Bowls Tu 13: 2 and 13: 5 were also found in association with two Cochabamba-style keros (Tu 13: 3—4) with predatory animal design in virtually Classic style.

The textilian-influenced geometric decoration is also met with on flaring-sided bowls. Tu 5: 2 is the most typical instance of this style of decoration.

The decoration on Flaring-sided Bowls Tu 27: 9 from the 200-cm stratum and Tu 4: 3 from the 100-cm stratum has a direct parallel in







CM	Shape 4	Shape 5	Shape 6
0			
50			 TU 16:1 26:3
100	 TU 18:2		 TU 17:3 TU 15:1
150	 TU 5:6	 TU 5:8 5:13 5:14 21:1 TU 27:10 27:14 27:18	 TU 20:1
200			

Fig. 45. Table of recovered Vases (Shape 4), Constricted-neck Bowls (Shape 5 and One-handed Pitchers (Shape 6), Tukuraya.

Keros Tu 27: 7 and Tu 26: 8 from corresponding graves and strata. This also applies, as mentioned, to the decoration in the form of a bird figure on Flaring-sided Bowl Tu 21:9, which has a parallel on Keros 26: 2 and 3 as well as Pitcher Tu 16: 1, the latter three specimens from more near-surface graves (cf. pp. 74—75).

Any alteration in shape in the case of flaring-sided bowls from more deeply situated graves and more near-surface dittos has not proved possible of establishment. With regard to flaring-sided bowls, inferior workmanship is plainly evident, however, in the case of miniature vessels.

Types other than keros and flaring-sided bowls are represented by a small number of specimens only, thus offering smaller possibilities for study of changes in the decoration in relation to the depth at which found, i. e. the date.

As pointed out, among all Tukuraya specimens *Flaring-rim Vase* Tu 5: 6 (Shape 4 Fig. 45) shows the most Classic decoration. This vessel derives from a grave at a depth of about 150 cm. Thus we have here not only a decoration but also a Classic shape of vessel quite at variance with *Bennett's* (1936 pp. 351, 501) assumption that "one may not find a true branch of the Classic Tiahuanaco" in what by him was labelled

"the Lowlands". In the matter of decoration, another specimen of the same type, Tu 18: 2, shows a more textilian-influenced design.

The specimens representing Shape 5 in Fig. 45 — *constricted-neck bowls* — show a shape in some degree identical with the two vases representing Shape 4 and might consequently be regarded as miniature versions of this type. However, the opening section of the vessels representing Shape 5 shows a divergent modelling, the which prompts their classification as a separate group. Of these vessels only a single specimen, Tu 27: 18, shows the painted decoration preserved. The S-shaped decorative detail strengthens the impression that the stone-chamber grave where this specimen was located is of relatively late date.

The handle on *One-Handled Pitchers* Tu 16: 1 and Tu 24: 3 (Shape 6 Fig. 45) shows unique fashioning — a form that best could be termed double ear. Both specimens have a typically Decadent geometric decoration. On Vessel Tu 16: 1, however, attention is drawn to a bird figure corresponding to those on Inca vessels. Otherwise this pitcher shows workmanship fully comparable to the best Classic specimens from the Tiahuanaco focal area. As to the modelling, a modern parallel to this vessel is found among the Chané and Chiriguano (*Nordenskiöld* 1920 Fig. 47: 7). The decoration on the similar vessel Tu 20: 1 also shows Decadent style features.

Also in the case of one-handled pitchers we note the occurrence of what might be a miniature version thereof, Tu 11: 3, Tu 15: 1. The decoration on these vessels, however, is much too obliterated to furnish any points for comparisons. As to the fashioning, a so-called thumb grip on Vessel Tu 11: 3 in the form of a lobate brim protrusion just above the handle is notable. We have here a counterpart as regards purpose and use to the smaller ear atop the larger ditto on Pitchers Tu 16: 1 and Tu 24: 3.

The *twin-eared bulbous vessels* listed under the designation Shape 7 Fig. 46 constitute a rather heterogeneous lot. A common characteristic for them is the bulbous shape, the small opening diameter and outcurving brim, occasionally also a cylindrical neck section and two vertically placed ears, most frequently on the upper side of the bulbous section or just in the transition between this and the neck section. Of these latter specimens only Vessels Tu 18: 8, Tu 18: 17, Tu 13: 6 and Tu 21: 5 show the painted decoration in a state enough preserved to permit establishment of its original form. On the two first-mentioned the decoration seems to have been identical yet as regards the modelling itself certain divergencies are noticeable.






















CM	Shape 7	Shape 8	Shape 10	Shape 11	SHAPES 9, 11, 12								
0													
50													
100	 TU 1:7	 1:5	 18:8	 18:17	 18:15	 18:11	 18:22	 TU 18:20	 18:4	 1:4	 TU 25:1	 TU 10:1	
				 TU 14:2							 TU 4:4	 4:2	
150	 TU 13:6												
	 TU 27:5								 TU 21:11			 TU 5:12	
200	 TU 27:17												
	 27:13												

Fig. 46. Table of recovered Twin-eared Bulbous Vessels (Shape 7), Twin-eared Spherical Bowls (Shape 8), Drinking-tube Vessels (Shape 10), Hollowed-base Libation Bowls etc. (Shapes 9, 11, 12) and Chuquisaca Mojocoya Tricolor Ware, Tupuraya.

As miniature version of the vessels listed as Shape 7 it might prove possible to count Tu 18: 11, Tu 18: 22, Tu 27: 13 and Tu 27: 17. The decoration and shape of Vessel Tu 13: 6 suggests the possibility that we have here to do with a miniature version of the fermentation jars occurring with identical modelling in the Tiahuanaco focal area (Rydén 1947 pp. 66—67).

As far as I am aware, any parallel to Shape 8 Fig. 46—the *twin-eared spherical bowl* — has not been found as yet in the Tiahuanaco focal area. Hence Shape 8, like the Cochabamba-style kero shape, may have to be regarded as a type characteristic of the Cochabamba area. The characteristic shape given the ears on Vessels Tu 1: 4, 18: 4 and 18: 20, agrees with the ear shapes on many Tupuraya ollas (Shape 13 Fig. 47). The relief boss on the bulbous part of Vessel Tu 1: 4 is another parallel to ollas (cf. Tu 27: 2). The small-size ears on some of these vessels speak for suspensory use.

The tube-like protuberance on Vessels Tu 4: 2 and 4: 4 (Shape 10 Fig. 46) in all likelihood served as drinking-tube, not spout (Rydén 1956). In any case whatever, this detail, while proving that the specimens in question were used as libation vessels, also demonstrates the affinity to the Tiahuanaco focal area, where these vessels occur, and, moreover,

in a relatively greater proportion. It is also established that this *drinking-tube vessel* occurs in a miniature version (Tu 4: 2).

In the Table Fig. 46, Shapes 9, 11 and 12 are brought together into one column. Should Vessel Tu 5: 12 prove to be a *hollow-base libation bowl*, (Shape 11), this miniature vessel would then constitute a shape having a parallel in the Tiahuanaco focal area. On the other hand, judging from data at present available, Vessels Tu 18: 13 (Shape 9) and Tu 25: 1 (Shape 12) should represent types characteristic of the Cochabamba area. Judging from the shape of the ears, the latter is meant as a *suspension vessel*.

TIAHUANACO UTILITY WARE

Tupuraya Tiahuanaco utility ware comprises in the main two types — ollas (Shape 13 Fig. 47) and one-handled pitchers (Shape 14 Fig. 47). Beyond the fact that vessels of this kind have been found in association with Tiahuanaco-decorated specimens there is no evidence to show that they actually represent the Tiahuanaco culture. Nor do the few data available from the Tiahuanaco focal area shed much light on this ware.

In the case of *ollas* (Shape 13), any change relative to the vessel's date — the level at which found — is limited to the form given the ear. Thus, on earlier specimens the ear tends to assume an angular shape jutting up into a point — thumb grip — above the brim while later specimens show a more semi-circular form moved down slightly on the vessel's side. However, since the latter type of ear occurs also on specimens from the bottom stratum (Tu 5: 8), any definitely deliberate purpose in this direction is difficult of establishment. In the Tiahuanaco focal area an olla shape with ears placed on the vessel's side was in use probably as early as Classic times (Rydén 1947 Fig. 6:k p. 66). The thumb grip on the angular ear is invariably decorated with some parallel incised lines or a linear cross. Any difference in the occurrence of these two decorative details in relation to the level at which found is not noticeable. When the ear has received a semi-circular form while moved lower down on the vessel's side, the thumb grip simultaneously disappearing, the decorative parallel incised lines are carried over to a faintly marked boss on the rim above the ear (Tu 9: 2). This latter detail is characteristic also for ollas from late Tiahuanaco cists in the Muñecas area (Rydén 1957 p. 147). On the other hand it seems to be





























CM	Shape 13	Shape 14	Shapes 15-18
0	 TU 9:2	 TU 8:1	
50	 TU 19:1	 TU 3:1	 TU 26:5
	 TU 22:1	 TU 22:4	 TU 10:3
	 TU 16:2		
	 TU 24:2		
	 TU 26:6		
	 TU 6:2		
100	 TU 19:3		
	 TU 18:26		
	 TU 4:5		
	 TU 4:6		
	 TU 14:1		
150	 TU 5:8		 TU 21:6
	 TU 21:4		 TU 21:10
	 TU 20:4		 TU 21:12
	 TU 27:2		 TU 21:7
	 TU 27:5		 TU 23:2
200	 TU 27:16		

Fig. 47. Table of recovered Ollas (Shape 13), One-handed Pitchers (Shape 14) and other Utility Ware (Shapes 15—18).

missing on corresponding vessels from the Tiahuanaco focal area as well as on ollas of post-Tiahuanaco date.

Any corresponding change in the case of *one-handed pitcher* ears (Shape 14) cannot be established, this perhaps because this vessel type appears in four specimens only while not represented by any specimens located in the nethermost layers. An as to shape virtually exact Tiahuanaco parallel to One-handed Pitcher Tu 3: 1 is shown by *Bennett* (1936 Fig. 12:e).

The occurrence of miniature forms in the case of ollas has been earlier pointed out (pp. 68—69). As appears from Fig. 47, midget-size ollas are even predominant. Only a single pitcher (Tu 10: 3) is small enough to warrant a possible designation as miniature vessel. A thumb grip is noted above the ear on Pitcher Tu 3: 1.

The rest of vessel types representing Tupuraya Tiahuanaco utility ware are here brought together in one column (Shapes 15—18) in Fig. 47. Of these, *Suspension Vessel* Tu 26: 5 might be a miniature olla although lacking the curved-out rim characteristic of this type of vessel. Another miniature suspension vessel is the Tiahuanaco-Decorated Vessel Tu 25: 1 already dealt with.

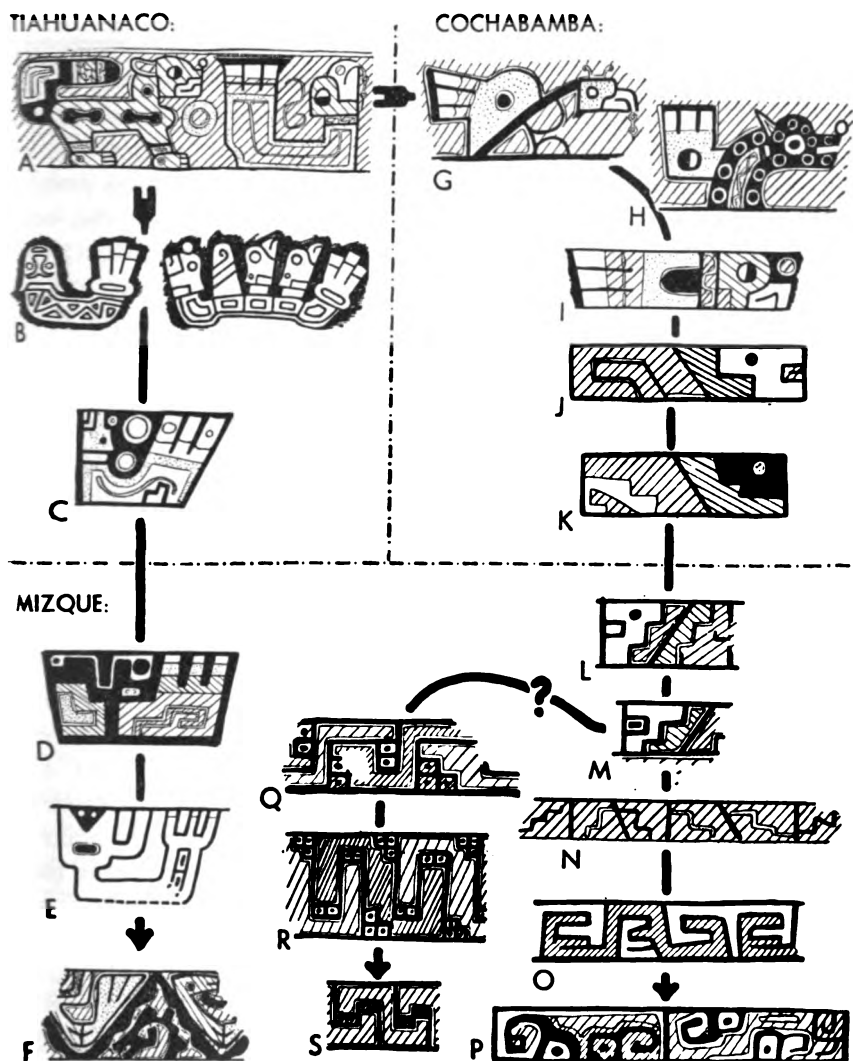


Fig. 48. Origin and evolution of the condor-puma motif.

As to the *Primitive Vessels* 21: 8, 10 and 12, and Lid Tu 21: 7 eventually belonging thereto, the inferior ware and crude workmanship in the case of these specimens have earlier been pointed out. Similar crudity of workmanship is reflected by Vessel Tu 23: 2.

CHUQUISACA MOJOCOYA TRICOLOR WARE

A special group — Chuquisaca Mojocoya Tricolor Ware — is represented by Tripod Bowl Tu 10: 1. The decoration and shape of this vessel, in some measure also the ware, differs completely from Tiahuanaco ware. As earlier pointed out (cf. pp. 20—21), sherds of this pottery were found in the culture strata surrounding the burials. In this connection a concentration of this sort of sherds to the bottom strata was noticeable. During the examination at Cayhuasi near Oruro on the table-land, dealt with below, a sherd (Fig. 55: D) identical with Sherd H from the 150- cm and deeper stratum (Fig. 6) was found at the corresponding level relative also to the Tiahuanaco ware. The Chuquisaca Mojocoya Tricolor specimens comprise at Tupuraya roughly 5 percent of the sherds found in the bottom stratum. Noteworthy is that even though Chuquisaca Mojocoya Tricolor sherds are most numerous in the bottom stratum any intact vessels of this sort are not found in the bottom-stratum graves. The sole located intact vessel eventually associated with a grave (Tu 10: 1) hails from a near-surface stratum.

The sherds in question (Fig. 5 50—100 cm: J, Fig. 6 100—150 cm: C, 100 cm and Deeper: C—H) and the tripod bowl mentioned (Tu 10: 1) show divergencies from the Tiahuanaco ware of significance enough to convince me from the start that we have here to do with a ware of which the origin must be sought outside the Cochabamba area (Rydén 1952 Fig. 4 pp. 47—48). Some vessels in the La Paz museum with Chuquisaca as reported provenance indicated a likely point of origin of this ware. As a matter of fact, Chuquisaca as probable focal area of this ware was recently advanced by *Bramisa* (1957), who is also responsible for the designation Chuquisaca Mojocoya Tricolor Ware. For the above reasons this ware, when tabulating the Tupuraya specimens, was given a special position in Fig. 46. Again, it is by no means impossible that in an intact state it incidentally landed in the proximity of the other vessels of Tiahuanaco character comprised in the specimens Tu 10.

Bennett (1936 pp. 361—362) mentions tripodal ware at Arani. However, the difficulties he had to cope with in publishing his discoveries rendered his description of these specimens minus accompanying illustrations at best only cursory. A great deal points to the fact that we have here to do with Chuquisaca Mojocoya Tricolor Ware. With one exception these specimens of presumed Chuquisaca ware hail from the surface around the Arani mound. However, part of a tripod vessel

was found also at the actual examination of the mound, its position near surface above Burial AR-9 A, but since it was incomplete and in no grave association it might be considered disturbed by Burial AR-9 A, which represents the final phase of the Arani settlement — Arani III — and consequently older than Arani III. This would tally better with residual conditions in the case of Tupuraya and also as regards the Cayhuasi site treated below, where the Chuquisaca Mojocoya Tricolor Ware is concentrated to the lowest-lying strata.

Tripod ware is a type of vessel evidently lacking in the Tiahuanaco local area. Nordenskiöld's excavations early this century at various spots in the Bolivian lowlands east of the Andes showed that the tripod ware here is common (cf. *King* 1940). Thus it would seem that the tripod ware had originated in the east (cf. p. 117).

NON-CERAMIC ARTIFACTS

The number of artifacts other than ceramic ware found in the course of these examinations is strikingly minimal. The potter's tool of llama jaw found in the bottom stratum Fig. 6: Q is a common occurrence on both Tiahuanaco and Inca sites in the Titicaca area (*Rydén* 1947 pp. 80, 314, *Bennett* 1936 Fig. 29:s). They also occur in northwestern Argentina (*Rydén* 1936 Fig. 136:c). As far as I am aware, there is no direct parallel to the square stone mortar represented by a fragment (*Rydén* 1947 pp. 80, 314) among the specimens from the same stratum (Fig. 6: R). The fragmentary grindstone associated with Tu 21 attests to the fact that the settlers on the habitation site here dealt with were maize-growers. Actually, in the Bolivian area immediately east of the Andes, the grinding of maize by rolling the edge of a more or less natural-shaped stone of similar appearance against a stone foundation is still exceedingly common. This method has been personally observed by me in the province of Muñecas. In more or less modified form and with the use of similar implements albeit of wood, it is also met with in the lowland area immediately east of the Andes (*Nordenskiöld* 1924 Map 16). Hence its origin is likely to be Andine (*Rydén* 1936 pp. 221—227).

C A Y H U A S I

INTRODUCTION

Cayhuasi is a farm property in the province of Cercado in Oruro Department, approximately 40 kilometres northeast of Oruro City and roughly one kilometre northward off the road running from Oruro to Cochabamba past Paria, where, on the Oruro-Cayhuasi trip, the rail line to Cochabamba is also crossed. The farm, owned at the time of my visit by Señor Don Lucio Arze and located just at the foot of the lowest ranges forming the eastern limits of the table-land, as result of the proprietor's foresight and tireless reformative endeavour had been turned into a model establishment.

My field-work at Cayhuasi was carried out in the latter part of April 1952 upon conclusion of the Cochabamba examinations. The aim had been to make it a great deal more inclusive than what appears from this report — thus I was unfortunately compelled to skip the "chullpas", or adobe grave houses, which appear in these parts. Work here had to cease on account of the disturbances following the revolution in March 1952 and inter alia leading to the murder of a landlord family at nearby Sicasica.

From Cayhuasi a by-road leads in an easterly direction along Rio Cayhuasi. A kilometre or so away, this road runs past a modern dam construction located just outside the sketch map Fig. 49 and, shortly afterwards at right, the affluent to Rio Cayhuasi shown on the map. Both this affluent and the main river run through broad canyons and have mostly steep banks and stony bottoms. On this occasion only the main river's centre channel carried water — a puny creek meandering along out on the wide and level riverbed.

In the shaded area on the map Fig. 49 a number of sherds were located thanks to a friend of mine, the late Mr. Bror Wikström, Swedish consul at Oruro. Some surface residue in the form of a dozen sherds or so had reached me already while in Sweden, this indicating that there must

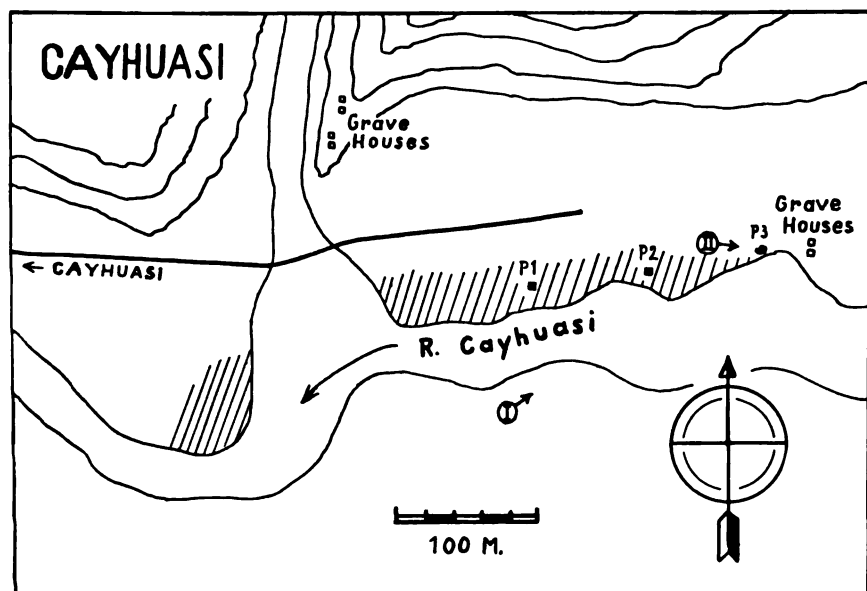


Fig. 49. Sketch map of Cayhuasi. Circle with Roman figure I and arrow shows camera position for Fig. 51, with Roman figure II for Fig. 50.

be a habitation site hereabouts from Tiahuanaco days. In fact, this surface residue, coupled with reports of grave houses in the vicinity, proved the actual incitement to my enterprise in this area.

The section yielding sherds consists of a slight but plainly marked elevation. This elevation which, judging from residual incidence, once formed the focal centre of settlement might indicate that we here, too, have to do with a mound parallel to the one at Tupuraya, although actually minus burials. At any rate, none were revealed by the pit examinations. On the sketch map Fig. 49 this more elevated residential area is not marked by any altitude curve but only by parallel ruling. It is, however, shown in Fig. 51.

Rio Cayhuasi has eaten away part of the site, perhaps even its main portion. As seen from the map Fig. 49, the aforementioned affluent now runs through the western part of it. A depression would indicate that it once ran some distance farther to the west. In the sheer banks, frequently 5 m high, cut out below the site by the erosive force of the stream, sherds are noticeable down to a depth of about 175 cm below the present surface level. It seems as if this residue were concentrated



Fig. 50. Test-digging for Pit 3, Cayhuasi. In background two adobe grave-houses.

somewhat to two different levels, one at a depth of some 80 cm, the other at 150—175 cm. However, in collecting sherds from the banks, no difference in the residue from these two levels could be noticed. The occurrence at Tupuraya of two strata at identical levels might be incidental.

Around Cayhuasi, as mentioned, there are a number of adobe grave-houses. Thus, within the area covered by the sketch map Fig. 49, there are no less than six of these structures (cf. Fig. 51). Seemingly appearing throughout in pairs, time has wrought great havoc to them, hence their planned examination may have yielded but poor results. The two structures in Fig. 50 — those farthest east on the map Fig. 49 — have survived to slightly more than a man's height. The ground plan was rectangular, like that of the chamber, this probably having had a pointed, ridge-shaped ceiling constructed according to the corbelled-arch principle and with its lengthwise axis oriented in the structure's lengthwise direction. The entrance had been located in the centre of the longer east side. The building material, as stated, was adobe.



entre and farthest right.



Fig. 50. Test-digging for Pit 3, Cayhuasi. In background two adobe grave-houses.

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EXCAVATION

Surface Residue (Fig 52).

Fig. 52 shows some objects collected on the canyon's bottom below the site, in the cut downwards to it or as surface residue on the site itself.

Sherd 52: A represents a bowl-shaped specimen of light-brown ware. The surface, especially on the inner side, is well-polished. Decoration on this side in fine black lines. The foot is low and annular, this coupled with the probably vegetabilian decoration dating the vessel to modern times.

Sherds B—X represent the Tiahuanaco culture. Of these, Sherd B derives from a Cochabamba-style kero, C—K, M, N, P and perhaps also O from the more conventional goblet-shaped kero type — possibly some or other of the smaller rim sherds represent flaring-sided bowls — and Q—S from flaring-sided bowls. Presumably Sherd L also represents this latter type of vessel although having had its decoration chiefly on the inside. Of the rest, Sherds U—V from eared bulbous vessels with wide openings. On the vessel represented by Sherd U the diameter is at least 20 cm. Thus the shape would have suggested an olla. Sherd W derives from a vessel of indeterminable shape while Rim Sherd X probably represents a vase. Sherd T represents an unusual shape, an open bowl type with a 30-cm opening diameter, this making it problematical whether it could be counted in as representing the Tiahuanaco culture. Sherd E has a brownish coating on the entire outer side. A similar coating covers only the top part of the inner side on Sherds C, D and F, thus showing that these sherds derive from keros. This coating on the inner side, contrary to the bowl sherds, is missing on the rest of the kero sherds unless they are rim sherds. Decoration in black alone on Sherds D, F, J, K, Q, R, T, U, V, with black and white on C, E, G—I, O, P, S, X, in white alone on Sherd N. On Sherd M the horizontal field under the coating field adorned with black linear decoration is orange-coloured above. To black on Sherd L is added grey as decorative colour in the cross-shaped field, on Sherd W a darker red-brown shade in the V-shaped field, this perhaps preventing the counting in of this sherd, too, with the representatives of the Tiahuanaco culture among the surface residue. Probably because of faulty

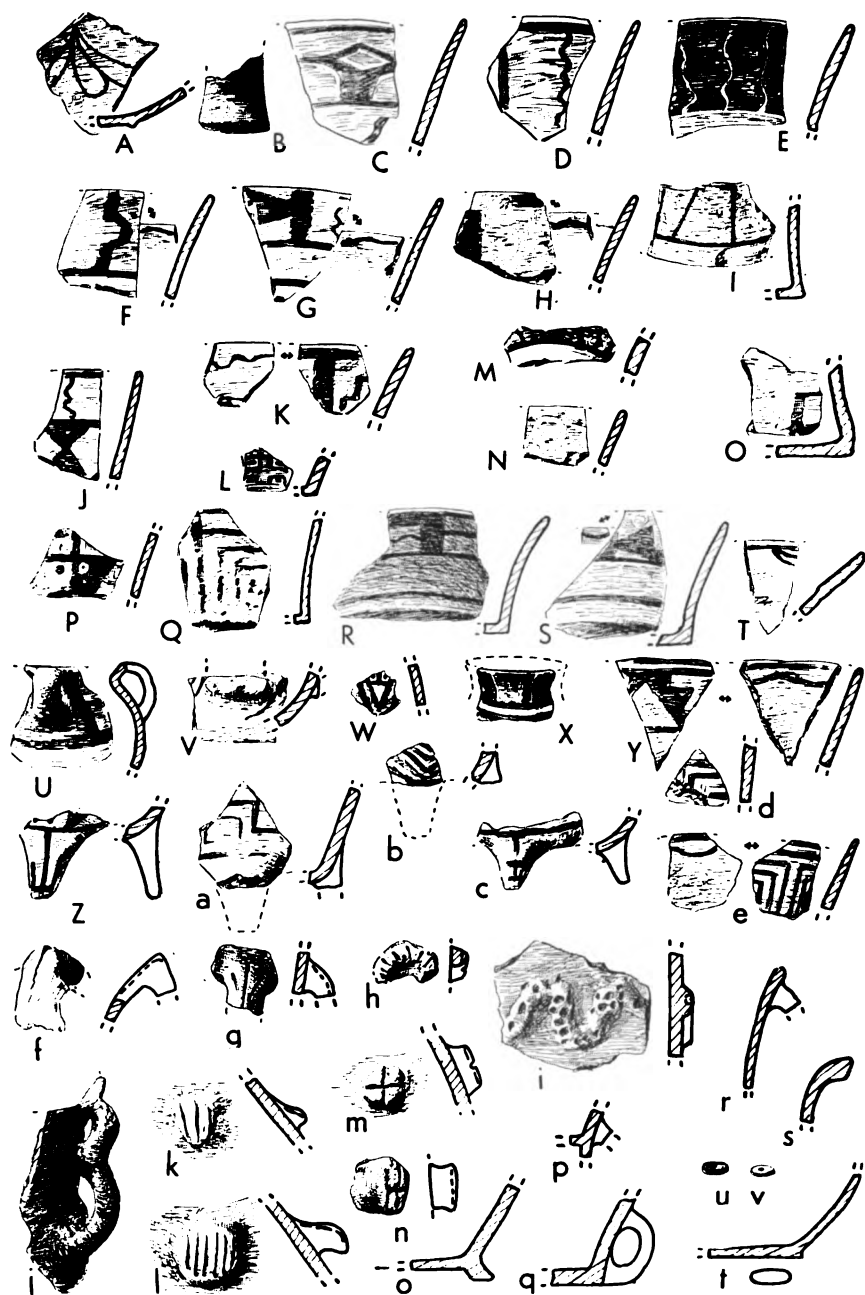


Fig. 52. Cayhuasi surface residue. 1/4.

firing, the decorative colours on Sherds E and X, tending to whiteish or greyish, are, like the brown coating, vitiated. The opening diameter of the bowls represented by Sherds R—S has been approximately 20 cm.

Sherds Y—e are of greyish-brown ware and have a whiteish coating. The decoration on Z, b and d is in black and brown while black alone has been used on the remaining sherds in this group. Sherds Z—c represent a type of probably tripod bowl, this also classifying the entire lot of sherds in this group Y—e as representing the Chuquisaca Mojocoya Tricolor Ware.

Sherds f—t are of olla ware. The best polished outer side is found on Sherds j, o and t. The outer side of Sherds o—q may have had a brown coating. The opening diameter of the vessel represented by Rim Sherd r has been at least 15 cm. Rim Profile s appears on several sherds. The opening diameter here varies from approximately 15 to 25 cm. Bottom surface of Sherd t oval (cf. figure).

Two disc-shaped pearls, one of a greenish turquoise-like species, the other white and presumably of univalve shell, are shown as u and v.

A bottom sherd of an olla with the imprint of a round basketry plate in coil-technique is shown in Fig. 53.



Fig. 53. Olla bottom sherd with imprint of coiled basketry, Cayhuasi. 1/1

The surface residue shows that Cayhuasi is a dwelling site from Decadent Tiahuanaco times. One sherd — Fig. 52: A — is of modern origin while no sherds representing the Inca culture is noted, nor any post-Decadent, i. e. representing settlement on the spot subsequent to the Decadent Tiahuanaco era. The surface residue, like the pit residue on this dwelling site dealt with below, would thus indicate that settlement here ceased with the Decadent Tiahuanaco era. Remarkable is the incidence of Chuquisaca Mojocoya Tricolor Ware already among the surface residue. At Tupuraya these sherds occurred in concentration to the bottom stratum. In the Cayhuasi pit dealt with below they are found at an identical level. The fact that Chuquisaca sherds are found at Cayhuasi as surface residue would thus indicate that the residential area has been exposed to strong erosion that has reached as far down as the lowest-lying culture strata. Noteworthy is, however, that

no surface residue of definite Classic Tiahuanaco character was encountered, this inasmuch as such residue was found in the pit.

Pit Residue

The initial examination at Cayhuasi aimed at correlation of the habitation site and the nearest grave houses — the pair located immediately east of the site — while simultaneously attempting an establishment of the age and character of the site itself. As regards the latter, the surface residue had already furnished certain data. A reasonable working hypothesis was that the site's culture layer extended in under the grave houses, or that sherds washed off the site might be located by and under the grave houses and thereby date these to a later period. With a view to solving these questions a pit was sunk — Pit 1 — at the spot that could be presumed, judging from the surface residue, to be the centre of the site, another pit — Pit 2 — nearer the grave houses, then Pit 3 still closer by them, after which the aim was to examine the grave houses themselves and sinking a pit that would extend in under these. Already Pit 2 revealed a strikingly diminishing residual wealth, indicating that the pit had only touched the periphery of the site. Pit 3 yielded no residue corresponding to that from the site. Instead it revealed a libation spot of a previously unknown kind. In connection with the examination of this last pit, work at Cayhuasi had to be discontinued, hence the planned examination of the grave houses and one pit close by was never carried out.

Pit 1 (Figs. 54—55)

This pit, 2 m square, was sunk at the most elevated point (map Fig. 49, cf. Fig. 51). The surface soil was marked by a heavy admixture of ashes.

0—50 Cm

Plain traces of ashes could be observed continually.

Besides the objects shown and mentioned below, also 60 bone fragments, all probably of llama, were secured. Most of the olla sherds derive from vessels of rather crude workmanship — the wall is about 1 cm thick. In some the ware tends to reddish. Five sherds have ears, 6 are bottom sherds. Besides those shown, 11 kero sherds and two from flaring-sided bowls were also obtained. Of these sherds not shown, four have traces of decoration in black-and-white, two in black

only. One sherd not shown derives from a bulbous vessel with brown coating on the outer side.

Sherds A—J in Fig. 54 represent the Tiahuanaco culture, in the case of Sherd J everything pointing to its Classic epoch. Sherds H and I derive from flaring-sided bowls, Sherds A—B, D—G and J from keros. The type of vessel represented by Sherd C is more problematical, this because it has painted decoration also on the inner side. However, it is most likely a kero. The entire lot has a brown coating on the outer side, Sherds C, H and I also on the inner side. On Sherds A—B this coating appears only above on the inner side, this showing that the sherds derive from keros. A coating is altogether missing on the rest.

The decorative colours are black-and-white on Sherds A and B and on the inner side of C and J, where white covers the field at left that denotes a jaguar foot. Black is sole decorative colour on the outer side of Sherds C, D, F, H and I. On Sherd E, besides black-and-white, appears also orange in the semi-circular field below. The corresponding field above has the shade of the coating. On the same sherd white appears as thin edge lines and as a wavy line in the orange field and between the black lines below. On Sherd G orange appears in the middle horizontal field while white covers corresponding field above and below, the latter with traverse black zig-zag lines.

Ear fragment K derives from a vessel of brown ware with brown coating.

Sherds L—O represent vessels of olla type. Sherds L—M show the bottom profiles which occur, N—O neck profiles. Sherd N derives from a specimen with a 20-cm opening diameter, O from one with an opening diameter of 12—15 cm. Sherd P derives from a vessel with hollowed base. The outer side, like the inner side above, may have had a brown coating.

Fragment Q derives from a grindstone of a fine-grained greyish rock species.

Bone object R, a llama lower-jaw fragment, is noticeably worn at right below. I have earlier assumed that objects of this kind were used as scraper or matrix in pottery-making (cf. p. 85).

50—100 Cm

At a depth of 60 cm we came upon a 5 cm deep layer strung through as if by fine white threads. In the same layer traces of fired clay. At the same level the grey-ware kero sherd shown as I was located. The ash incidence was less throughout than in the surface stratum examined.

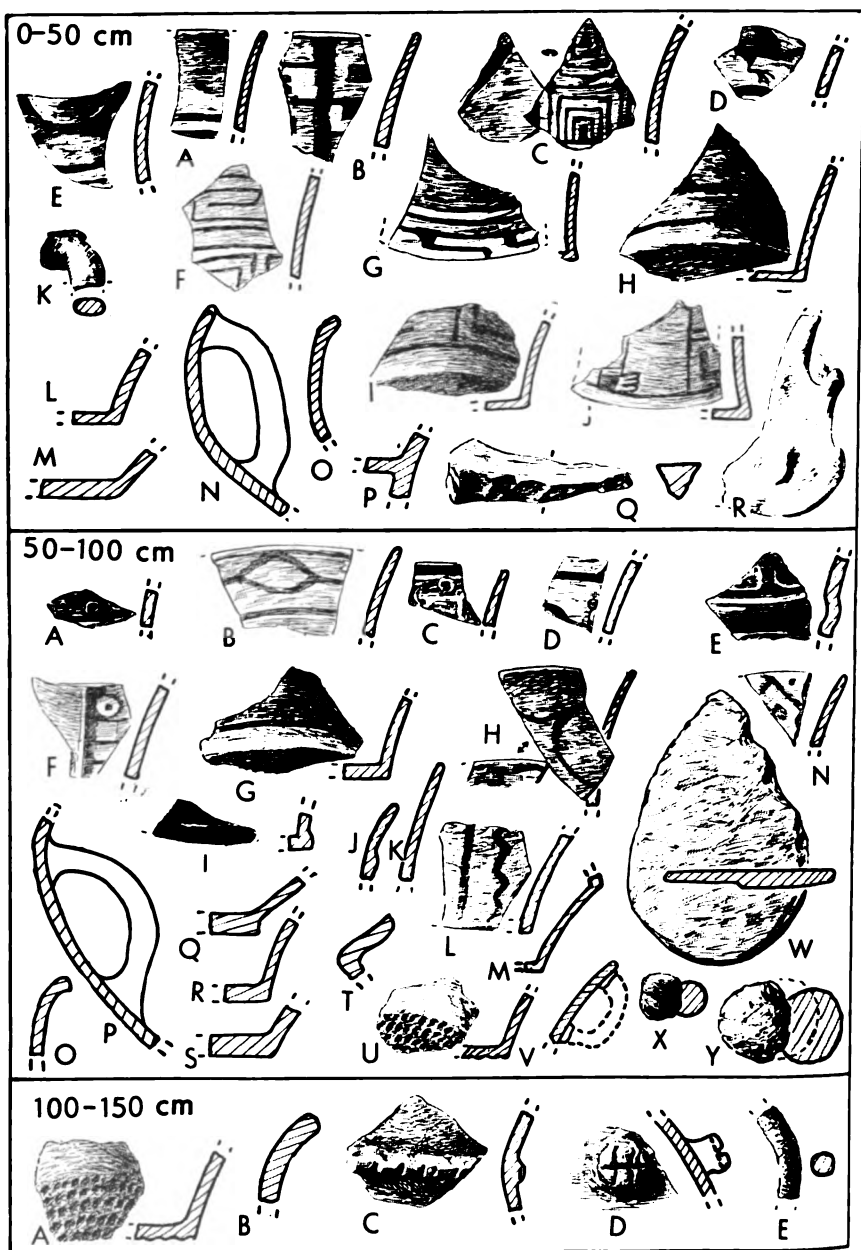


Fig. 54. Objects from Pit I, Cayhuasi. 1/4.

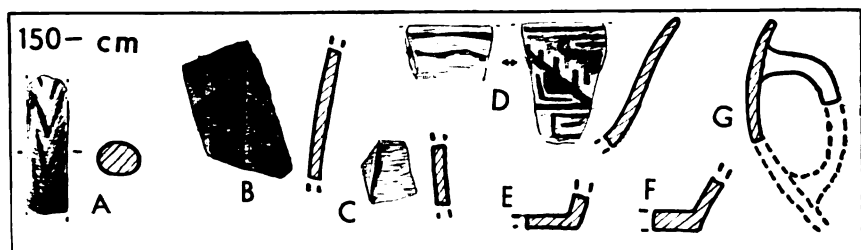


Fig. 55. Objects from Pit 1, Cayhuasi. 1/4.

At 75 cm the stone hoe-blade shown as W was found. In the pit's northeastern section, at a depth of 80 cm, a lens-shaped stratum of soil, charcoal rests and fired clay lumps, was cut through. At the same depth the bola stone shown as X was found. Residual matter diminished appreciably towards the bottom of this stratum. At 95 cm, simultaneously with a larger llama-jaw fragment, the big neck sherd shown as P was found.

Besides 38 olla sherds, a total of 39 bone fragments, all probably of llama, were secured in this stratum.

Of the sherds shown from this stratum, Sherds A—M represent the Tiahuanaco culture. Among these, Sherd D shows traces of decoration of probably Classic style. Thus the design below at right may represent the snout portion of a jaguar. Sherds A—F, H, I—K derive from keros while Sherd G hails from a flaring-sided bowl.

The decoration on Sherd A is in black, white and orange, the same colours recurring on Sherds C—G. Orange thus appears on Sherd A in the field above delimited by a black line and under the horizontal line below, as the quadrangular line on Sherd C, above the horizontal black line on Sherd D, in the fragmentary rectangular field above at left on Sherd E, as a thin vertical line across Sherd F, as well as under the black line on Bottom Sherd B, where black is the other decorative colour.

On Sherd F white covers the circular field and the left portion of the three horizontal fields below this circular field. These three fields might represent the tail section of an ornithomorphous design of the type rather characteristic of the Classic Tiahuanaco style if not — together with the circular field — a puma head. Black is the sole decorative colour on Sherd H. All of Kero Sherds I—K are of black ware. Sherds L—M represent another type within Tiahuanaco pottery

— the angular body bowl. In both instances the outer side should be covered by light brownish paint. On Sherd L there are additional black decorative lines on this coating.

Sherd N is of brown, fairly coarse ware with polished surfaces. The inner side is coated with whiteish paint on which there is decoration in black. This sherd should represent Chuquisaca Mojocoya Tricolor Ware or perhaps a ware reportedly appearing on the table-land south of Oruro. The opening diameter is 20 cm.

All of Sherds O—V represent vessels of olla ware. The opening diameter of Vessel O has been approximately 15 cm, of Vessels P, T and V about 25 cm. Bottom Sherd U has on the underside the imprint of coiled basketry.

Stone objects W—Y are of greyish rock. In W the rock species might be stratified. This latter object is a hoe-blade, X and the fragmentary object Y bola weights.

100—150 Cm

At 125 cm, in the centre of the pit, we came upon a hole as it were with a 50-cm diameter, filled with softer soil and containing the skeletal remains of apparently an infant or foetus. These skeletal remains were in a state precluding their collection. Throughout this stratum, between 100 and 150 cm, occasional streaks strung through by the earlier observed fine white threads could be noted. At 140 cm the soil became virtually void of residue and at the same time harder. At this level the sherds of a larger bulbous and quite thin-walled vessel was located, at 150 cm in the pit's northern section, sherds of a parallel but more thick-walled vessel. Two of these latter sherds had trunnion-shaped protuberances (Fig. 54:D). Here was also found the sherd shown as C. It is worthy of note that in this stratum only sherds of olla ware were found. A total of 25 bone fragments, all of which should represent llama, were collected and, in addition to the sherds shown, a further 37 sherds of olla ware. These latter are preponderantly of thick-walled ollas.

The bottom sherd Fig. 54:A has on the level bottom surface an imprint of coiled basketry. Sherd B shows a neck profile, the opening diameter approximately 25 cm. The previously mentioned Neck Sherd C with a horizontal relief stripe on the outer side derives from a vessel with a neck diameter of 20 cm. Both of these sherds with boss-like protuberances have the appearance shown by Fig. D, hence

should hail from one and the same vessel, especially since the ware is identical. An ear sherd of brown ware with an unusual — circular — cut is shown as E. This sherd is the sole specimen where the ware, owing to its more reddish shade, reveals a rather remarkable divergence from all the rest of olla-ware sherds.

150 Cm and Deeper (Fig. 55)

For a start several large specimens of llama bone as well as sherds of ollas, judging from the wall-thickness of fairly large size, were secured. At 170 cm the sherd of Tupuraya type shown as D and Ear Sherd A were found. At 200 cm all sherd material ceased. At this depth a 10-cm layer of hard silt-like soil could be observed in the pit's western face. The pit was carried down to 250 cm with no further residue encountered.

The collection in this stratum totalled 30 bone fragments and 33 olla sherds, of which five with a whiteish coating corresponding to Sherd N from the 50/100-cm stratum although minus the decoration painted on this sherd.

Ear Sherd A derives from a larger vessel of rather coarse brown ware. The surface is polished and may have had a coating of the ware's shade. Between the black decorative lines there may have been similar white ones. Sherd C is also of brown ware and has traces of decoration in black-and-white. These two sherds are the only ones in this stratum that could be connoted with the Tiahuanaco culture.

Sherd D is the one of Chuquisaca Mojocoya Tricolor type mentioned above (p. 21). It derives from a bowl with a 20-cm opening diameter. The ware is brown, surfaces well-polished, decorative colours on inner side black, on the outer black and red-brown on a whiteish or orange-shaded coating.

Sherd B derives from a vessel of a ware suggesting olla. When found it was covered by a soot layer. This washed off, the decoration on the outer side appeared on the well-polished surface. The outer side is greyish-black, and the decoration appears as two shades of this colour. It might be that the decoration has been produced by negative application. Also, vitiation of the original decorative colour as result of action by fire to which the vessel plainly has been exposed is conceivable.

Additional sherds of olla-type vessels are shown as E—G. The latter is represented by another similar sherd. The opening diameter is approximately 20 cm.

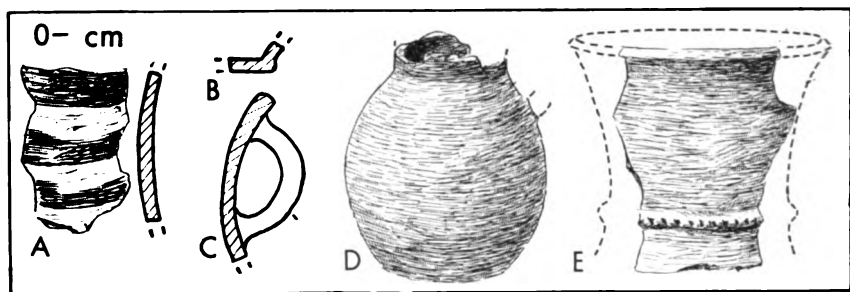


Fig. 56. Objects from Pit 2, Cayhuasi. 1/4.

Pit 2 (Fig. 56)

This pit was sunk roughly right between Pit 1 and the two grave houses to the east (map Fig. 49, cf. Fig. 51). Here the ground sloped down towards the sheer riverbank. That this spot had been more exposed to erosion than the sector where Pit 1 was sunk was proved by the fact that the ground here was somewhat furrowed by run-off rainwater. To be sure, a couple of sherds of Chuquisaca Mojocoya Tricolor Ware shown in Fig. 52 were found here by way of surface residue. Inasmuch as this ware rather would tie to older and consequently deeper strata, this circumstance, too, should attest to erosion here that has been heavier and reached deeper strata of the culture layer.

In a surface position just by Pit 2 also the vessel shown as D in Fig. 56 was found. This specimen might indicate that we here, too, have to reckon with graves corresponding to those at Tupuraya, the failure of locating any in the course of the examination being purely incidental (cf. also p. 96). The vessel in question has a well-polished surface, the ware is brown, once probably covered by a coating of the ware's shade. Judging from a fracture surface, there was once an ear.

The pit was made to a size of 2×2 metres. Ashes, sherds and bone fragments were found to a depth of 50 cm where residual matter ceased. At 80 cm the same hard silt-like layer was encountered as in the bottom stratum of Pit 1. This layer had not finished when work was discontinued at 110 cm.

Forty bone fragments, all probably of llama, and 20 olla fragments were secured. Of the latter, eight had a whiteish coating on the outer side. Another similar specimen, Sherd A, had traces of painted decora-

tion in broad black lines on the whiteish coating. Sherds B and C show bottom respectively rim profiles of two olla sherds. The opening diameter of Sherd C is approximately 20 cm. Another sherd of a vessel of olla ware with a somewhat smaller opening diameter is shown as E.

A review of the Cayhuasi pit specimens shows the occurrence already in the surface strata of sherds plainly representing the Classic Tiahuanaco era (Fig. 54 0—50 cm: Sherd J, 50—100 cm: Sherd D and. F). The pit specimens consequently render settlement at Cayhuasi earlier than the surface residue. At Cayhuasi, sherds of Chuquisaca Mojocoya Tricolor Ware occur in the nethermost strata although to a lesser extent than at Tupuraya (Fig. 54, 50—100 cm: Sherd N (?), 150 cm and deeper: Sherd D). As in the case of the surface specimens, one is struck by the fact that the bottom sherds of ollas almost without exception show basketry imprints on the level bottom surface — something never observed on corresponding sherds from the more central part of the Tiahuanaco focal area, nor on olla sherds from Tupuraya or Mizque Valley. Here we have evidently to do with a detail of olla manufacture characteristic of Cayhuasi — placing the lump of clay of which the bottom section is fashioned on a presumably circular flat basketry appliance. This would render feasible the turning of the vessel in the course of its making, whereby a symmetrical shape more easily would be imparted to it.

Pit 3 (Libation Spot, Figs. 57—71)

Already Pit 2 had shown, by its scanty residual stock, that it touched merely on the periphery of the ancient habitation site. However, in accordance with the earlier mentioned plan of trying to correlate the site and the two grave houses just east of it, a test-digging for a new pit was made almost exactly between the grave houses and the Pit 2 location (Fig. 49). In the course of this work a bulbous vessel with two ears was found lying almost immediately below the ground surface at a depth of 25 cm. In the opening there was a bowl placed as lid with the bottom in the vessel's neck (Cay I, Fig. 58, 1 on map Figs. 57).

This discovery naturally prompted continued investigations. The pit was successively extended, whereby a further 13 similar vessels, here numbered Cay 2—14, were found, all at about the same depth. However, one of these vessels, Cay 14, was damaged as result of its surface position. Any sherds of Tiahuanaco character that might point

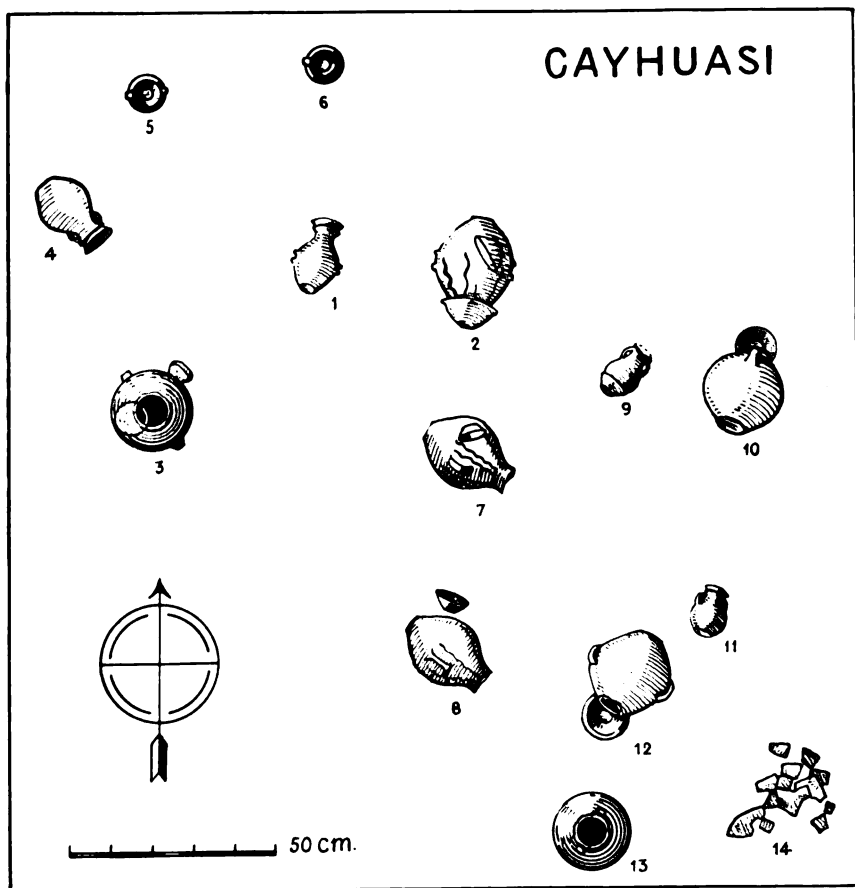


Fig. 57. Sketch map of the libation spot (Pit 3), Cayhuasi.

to an interrelation with the specimens from the habitation site were not found even though the excavation at one spot was carried down to a depth of about 1 m below the level at which the collections listed below were secured. Since work had to be discontinued prematurely owing to political conditions, the location of additional residue in this area of the the kind here described is by no means excluded. Thus, from Señor Don Lucio Arze, owner of the tract, I obtained a specimen parallel to the large vessel Cay 7 (Fig. 64). It had been found at a spot some kilometres east of the site for the present examinations. However, I never got a chance to visit, as planned, the spot in question, hence

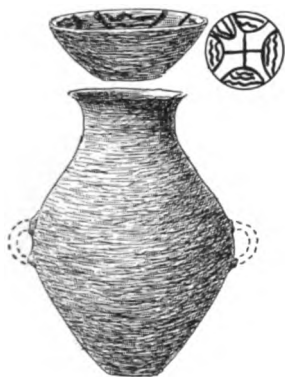


Fig. 58. Cayhuasi. Cay 1. 1/12.

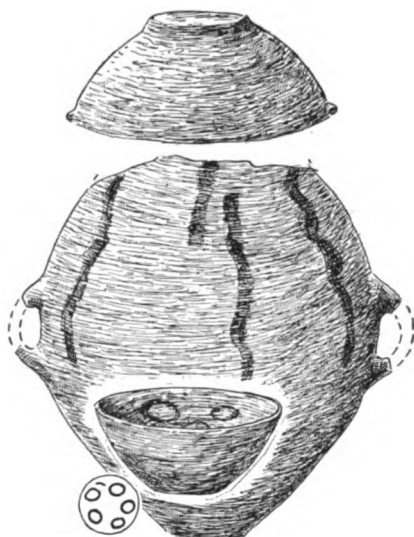


Fig. 59. Cayhuasi. Cay 2. 1/12.

this parallel specimen is of value only as proof that the collections here described are unlikely to be isolated occurrences in the Cayhuasi area.

When found, the larger vessel was frequently inverted and also filled with earth. However, if found standing, it was occasionally possible to observe, in the bottom, a perhaps centimetre-deep layer of seemingly granulated consistency — a layer that quickly disintegrated in the air. That this layer consisted of the sediment of a fluid once filling the vessel — possibly chicha — is not excluded. Inasmuch as the opening diameter of the larger vessel in each collection is much too small for its use as burial urn except possibly for a foetus or very young infant, and the vessels are invariably empty but for some earth in certain cases, alternatively the aforementioned sediment layer or a bowl that may have been the original lid, these larger vessels cannot very well be labelled burial urns. Instead I deem it likely that we have here to do with a libation spot. As appears from the following, all Pit 3 vessels here treated should be later than those from the habitation site, these latter representing the Tiahuanaco epoch. Hence they should instead represent the culture and the people who made use of the grave houses. Filled with chicha, they were conceivably dug down as offerings to the dead in the nearby grave houses. Post-mortem offerings of this kind among the Aymara are hinted at by *Poma de Ayala* (1936. p. 294).

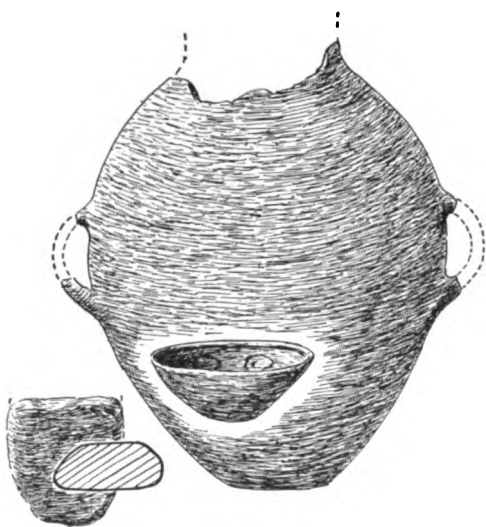


Fig. 60. Cayhuasi. Cay 3. 1/12.



Fig. 61. Cayhuasi. Cay 4. 1/12.

Cay 1 (Fig. 58)

Aryballus-like urn of greyish ware with outer side black, possibly affected by fire. Both ears knocked off while in use. Bottom section cracked, probably by too strong heat. Found lying on its side with opening slanting down towards north.

As lid, in the opening, a bowl of brownish ware with polished surface and painted decoration in black. Placed standing with bottom in the neck of the larger vessel.

Cay 2 (Fig. 59)

Aryballus-like vessel found leaning with opening towards south. Of brown ware with polished but as it were somewhat bubbly surface. Broad linear decoration in dark red-brown. Neck portion, like the ears, knocked off while in use.

Over the opening, as lid, a larger inverted bowl of reddish ware. Especially the inner side is well polished. Two bosses opposite each other immediately under the rim.

In the larger vessel there was a smaller bowl standing on edge with opening towards west. It is of brown ware with well-polished surfaces — especially the inner — and probably has a coating of the ware's shade. Decoration on inner side in dark brown, virtually black. It consists of circles.



Fig. 62. Cayhuasi. Cay 5. 1/12.



Fig. 63. Cayhuasi. Cay 6. 1/12.

Cay 3 (Fig. 60)

The larger vessel was found standing. Neck portion and ears knocked off while in use. Greyish-brown ware, outer side polished.

In the bottom of the larger vessel was found, besides sherds of it, a standing bowl of brown ware with polished although very weathered surface that may have been covered by a coating of the ware's shade. Decoration on inner side in black. In this vessel there was also a larger irregular stone, size $12 \times 8 \times 5$ cm. The bowl should once have been the vessel's lid.

The muller-stone fragment of a fine-grained rock species, shown in Fig. 60, was found outside the larger vessel by its bottom.

Cay 4 (Fig. 61)

Twin-eared bulbous vessel leaning with opening towards southeast. Of greyish ware with darker, almost black, outer side.

As lid a bowl standing in the neck of the larger vessel. Of brown ware with polished surfaces and decoration on inner side in dark, almost black-brown, shade.

Cay 5 (Fig. 62)

Standing olla-shaped vessel of greyish ware with black outer side affected by fire. Bottom cracked by fire action.

Lid of bowl, standing in neck of olla-shaped vessel. Brown ware, polished surfaces, decoration on inner side in black.

Cay 6 (Fig. 63)

Standing pitcher of greyish ware with darker polished outer side.

Bowl of brown ware with well-polished surfaces and decoration in black, standing as lid in the vessel's opening.



Fig. 64. Cayhuasi. Cay 7. 1/12.



Fig. 65. Cayhuasi. Cay 8. 1/12.

Cay 7 (Fig. 64)

Larger aryballus-like vessel lying with opening towards southeast. Of brown ware with polished surface and broad linear decoration in darker red-brown shade. Neck portion missing. Ears strikingly sturdy and ribbon-like.

Bowl of brown ware with reddish coating at least on inner side and painted decoration in black on the same side, found outside and under the larger vessel, leaning in about the same way as this. In addition, inner side of bowl is markedly well-polished.

Cay 8 (Fig. 65)

Aryballus-like vessel with knocked-off neck portion, of brown ware with polished surface and broad linear decoration in darker red-brown shade, lying with opening towards southeast.

Bowl that probably has been lid, standing on edge with opening towards northeast outside and north of the larger vessel. Of brown ware with reddish coating at least on inner side. Decoration in black on inner side which furthermore is well-polished.

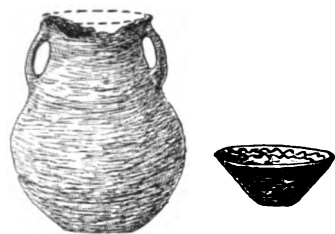


Fig. 66. Cayhuasi. Cay 9. 1/12.



Fig. 67. Cayhuasi. Cay 10. 1/12.

Cay 9 (Fig. 66)

Olla-shaped vessel of greyish ware with black outer side plainly affected by fire. Found lying with opening towards northeast.

Bowl that may have been a lid, found lying with opening against the bottom of the larger vessel. Of greyish ware, surfaces polished, painted decoration in dark red on inner side.

Cay 10 (Fig. 67)

Larger twin-eared vessel found with opening turned slantingly down towards northeast. Of greyish-brown ware with darker greyish surface somewhat black-coruscated. Outer side fairly well-polished, this in view of the vessel's size. A hole in bulbous section, judging from imprint around it, seems to have been mended with some wax-like now vanished substance.

Bowl standing as lid with its bottom in neck of larger vessel. Of brown ware with painted decoration in black on inner side. This latter is well-polished and might have a reddish coating.



Fig. 68. Cayhuasi. Cay 11. 1/12.



Fig. 69. Cayhuasi. Cay 12. 1/12.

Cay 11 (Fig. 68)

Olla-shaped vessel found with opening slanting down towards northeast. Of greyish ware with darker, almost black, outer side plainly affected by fire.

Bowl that has served as lid, standing with its bottom in neck of larger vessel. Of brown ware with polished surfaces with no decoration.

Cay 12 (Fig. 69)

Larger aryballus-shaped vessel lying with opening slanting down towards northeast. Of reddish-brown ware with well-polished outer side which has a broad painted linear decoration in black.

Larger bowl standing outside and slanting somewhat under bottom of larger vessel. Of more greyish ware with well-polished surfaces and decoration in black on inner side. Bottom perforated evidently after firing. Two rim bosses opposite each other on outer side under rim.

Smaller non-decorated bowl of brownish ware with polished sides, standing in preceding and covering the hole in its bottom.

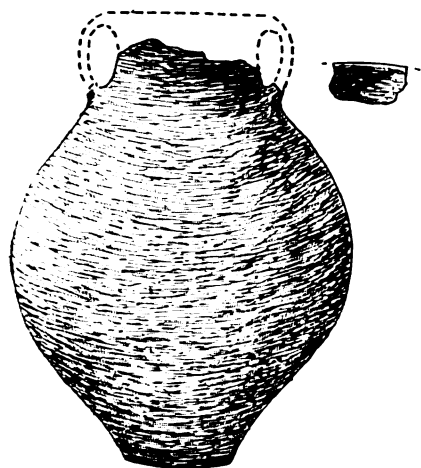


Fig. 70. Cayhuasi. Cay 13. 1/12.

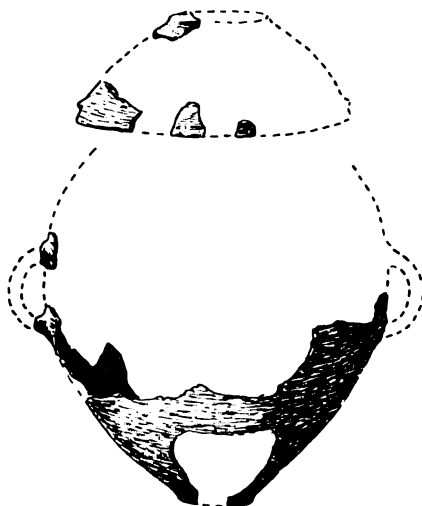


Fig. 71. Cayhuasi. Cay 14. 1/12.

Cay 13 (Fig. 70)

Larger twin-eared vessel with knocked-off neck portion and ears. Found standing with opening almost in ground surface. Of greyish ware with polished outer side possibly affected by fire.

In the vessel were found the shown sherds of a bowl of brown ware with polished sides, on inner side remains of decoration in black.

Cay 14 (Fig. 71)

A collection of sherds in surface position, representing on the one hand a larger aryballus-shaped vessel of greyish-brown ware with larger reddish coruscations in surface of polished outer side, on the other, a bowl of reddish ware with particularly well-polished inner side and at least one boss under rim.

Cay 14 should correspond to those previously described. Owing to their surface position, however, the vessels had been smashed and the sherds partly washed away by run-off rainwater.

CAYHUASI AS HABITATION SITE

That the Cayhuasi site has been the object of permanent settlement is proved — notwithstanding the fact that no traces of housing structures have been observed — not only by the occurrence of sherds and objects like bola weights etc. but above all by the occurrence of ashes and llama bones. The larger bones, almost without exception, are crushed as if to get at the marrow, this proving that they are meal rests. The fact that the great majority of sherds are olla sherds, i. e. of a type of vessel used as cooking-pots, also speaks for permanent settlement. Level conditions might indicate that we have here to do with a mound establishment, thus a form of settlement corresponding to that at Tupuraya, Arani and other sites in the Cochabamba area.

The fact that no graves were come upon at Cayhuasi corresponding to those at Tupuraya could be merely incidental. Whatever is preserved at the former site points to a marginal section, hence the assumption is near that the graves disappeared when the river washed away the central portion of the residential area.

TIAHUANACO-DECORATED WARE

The pottery with painted decoration shows that this site unquestionably belongs to the Tiahuanaco culture. Some sherds from the pit examinations — Sherd J from Pit 1 0/50-cm stratum, D and F from the 50/100-cm stratum — are decorated in virtually Classic style, hence this site must have been populated during this epoch, especially since the Classic sherds have been found at surface while the rest of sherds with Tiahuanaco decoration show no Decadent signs to speak of.

A noteworthy fact is that larger bulbous vessels, so-called water or fermentation jars, with broad linear decoration in black and of a ware identical with that in the finer vessels with painted decoration, are practically missing in the Cayhuasi residue, as in Tupuraya. One single Cayhuasi sherd might represent this type of vessel — Ear Sherd A Fig. 55 from the bottom stratum in Pit 1. Vessels of this type are otherwise particularly common in the focal area of the Tiahuanaco

culture south of Lake Titicaca (*Rydén* 1947 pp. 155 ff, Table I). It seems as if they are replaced in Cayhuasi by vessels of olla type, judging from the great number of sherds of this kind.

The funnel-shaped goblet — the Cochabamba-style kero shape — specially common in the Cochabamba area (*Bennett* 1934 p. 408) and Mizque Valley (*Rydén* 1955 Table I, p. 110), occurs among the surface residue from Cayhuasi (Fig. 52:B). During my Tupuraya examinations these vessels frequently also proved to be decorated with an ornithomorphous figure identical with the one on Sherd D from the surface stratum in Pit 1 (Fig. 54). This specimen, coupled with the aforementioned sherd of a Cochabamba-style kero, demonstrates the affinity between the Tiahuanaco residue from Cayhuasi and the Tiahuanaco residue from the Cochabamba area and, as regards the bird design, also with Inca pottery (cf. pp. 74—75). This and other similarities between Cayhuasi and Tupuraya are by no means surprising inasmuch as communication between the table-land — the Tiahuanaco focal area — and the Cochabamba region in ancient times just as in our own days surely followed the relatively comfortable route across the range east of Cayhuasi.

TIAHUANACO UTILITY WARE

As to ollas and vessels of olla ware, one notes among the Cayhuasi specimens that ollas frequently have the imprint of a coiled-basketry tray or mat on the bottom's outer side (Surface Residue Fig. 53, Sherds U and A from the Pit 1 50/100-cm and 100/150-cm strata respectively Fig. 54). To my knowledge no parallel specimens have been found in the Tiahuanaco culture's focal area. Additional and more patent novelties in the matter of fashioning among vessels of olla ware are the double ear on the surface specimen Fig. 52:j and the elliptical bottom of Sherd t in the same Fig. Again, noteworthy among the olla sherds is also the probably negatively decorated specimen from the bottom stratum in the same pit (Fig. 55: B).

CHUQUISACA MOJOCOYA TRICOLOR WARE

As in the case of Tupuraya, Chuquisaca Mojocoya Tricolor Ware constitutes a separate group within the painted pottery (Surface Residue Fig. 52: Y—e). Of the pit residue, Sherd D Fig. 55 from the Pit 1 bottom stratum is paralleled by the specimen Fig. 6: H from the

same pit level at Tupuraya. As earlier mentioned, Sherd N from the 50/100-m stratum (Fig. 54) differs somewhat from the rest, indicating relations in southerly direction.

The occurrence of Chuquisaca Mojocoya Tricolor Ware at Cayhuasi shows that this ware also reached at least the more marginal section of the Tiahuanaco focal area in the south, and also underlines the interrelation between Cayhuasi and Tupuraya and thereby the Cochabamba area. This alien ware appears on both sites also in the lowest-lying residual strata. In the case of Cayhuasi, however, this ware is also represented by surface residue. Again, insofar as concerns pit residue, the proportion of Chuquisaca Mojocoya Tricolor Ware to the rest of ceramic residue at Cayhuasi is less.

NON-CERAMIC ARTIFACTS

As in the case of Tupuraya, artifacts other than ceramic ware are scarce. This, however, does not prevent them from showing more and greater similarities to the specimens from the Tiahuanaco focal area. Thus, among the Cayhuasi specimens of this sort, we come again upon the potter's tool of llama jaw (Fig. 54: R from the 0/50-cm stratum). In the case of Cayhuasi, there are in addition bola weights of stone (Fig. 54: X and Y from the 50/100-cm stratum) as well as the stone blade, typical of the focal area, for hoe or possibly foot plough (Fig. 54: W from the 50/100-cm stratum; cf. *Rydén* 1947 Figs. 2: g, 43: A—C, 47: T, U, 48: a, 52: X, 58: A—C).

LIBATION-SPOT WARE

Among the Cayhuasi residue, the specimens from the libation spot — Pit 3 — occupy an isolated position. Neither the larger vessels nor the bowls have any parallels among those from the Cayhuasi habitation site.

The painted decoration on the bowls from the libation spot has a direct parallel in the so-called post-Decadent ware, the occurrence of which has been possible of establishment in connection with the examination of Wancani (*Rydén* 1947 p. 159 ff). Subsequently this ware received from *Bennett* (1950 p. 94) the designation Khonkho Black-on-Red. It is also paralleled by the group called Collao Black-on-Red by *Tschopik* (1946 p. 21 ff). No such facts have since appeared as would gainsay the establishment of this ware, i. e. that it should represent the ware

of the Aymara subsequent to the Decadent Tiahuanaco era, i. e. during the period of the Inca domination, and probably also in early colonial times. To about the same period it might prove possible to date the adobe tomb structures mentioned as being in use already by the first Spanish chroniclers (cf. *Tschopik* 1946 p. 10 ff, *Rydén* 1947 p. 406 ff). Hence the affinity between the libation spot ware and the grave houses at Cayhuasi should be considerably greater than between the libation spot ware and the dwelling site residue. The same people — the Aymara — are nonetheless the originators of the pottery in both instances, as of the grave houses.

It has already been stressed that the Cayhuasi libation-spot bowls tally not only with the so-called post-Decadent Tiahuanaco ware but also with the ware styled Collao Black-on-Red by *Tschopik*. *Tschopik* also associates this ware with a grave-house type which, however, diverges from the Cayhuasi graves houses as to construction (*Tschopik* 1946 p. 53, *Bennett* 1950 p. 95). Inasmuch as the specimens from the habitation site do not show any Decadent features to speak of, the assumption seems warranted that quite a lengthy interval elapsed between the desertion of the Cayhuasi settlement site and the appearance of the creators of the grave houses and the libation spot. If a dating of the libation spot needs must be done, I would place it to around the time slightly before, or shortly subsequent to, the Spanish Conquest. If the libation offerings concerned the tombs and those interred therein these tombs generally must have been earlier than the vessels used in the rites.

S U M M A R Y

The examination of Chullpa Pampa (*Rydén* 1952), carried out in conjunction with the examination of Tupuraya, shows that in the Cochabamba area we may have to reckon with a culture horizon older than the Tiahuanaco culture and exemplified by pottery of greyish or brownish ware, the latter often provided with a reddish coating or "slip" but minus decoration.

Chullpa Pampa is a dwelling site heavily damaged by erosion, hence unsuitable as object for a closer study. For this same reason the results actually obtained must be viewed as problematical. Even so, the utter absence of sherds with painted decoration, notably Tiahuanaco ware, is puzzling. On the other hand, neither do we find among the residue of Tupuraya or Cayhuasi any sherds of the non-decorated ware characteristic of Chullpa Pampa. If so, they should have been come upon in the nethermost and earliest residual strata. Consequently, any direct contact as between the Chullpa Pampa horizon and the Tiahuanaco horizon cannot be established. The greyish-ware pottery of the Mizque area shows a character divergent from the Chullpa Pampa specimens (*Rydén* 1956 p. 118 ff, p. 125 Table I). In Mizque Valley this greyish-ware pottery represents an alien infusion of suggestively eastern origin. At Cayhuasi or in the Tiahuanaco focal area, no specimens corresponding to those at Chullpa Pampa have been encountered. Of all work zones, the Tiahuanaco focal area is the region that has been subjected to by far the greatest number of thoroughgoing examinations, hence the absence of Chullpa Pampa ware in this area is so much the more striking.

In the case of Tupuraya and Cayhuasi, the earliest settlement would have to be dated to Classic Tiahuanaco times. This is indicated by some occasional burials in the case of Tupuraya, and sherd specimens in the case of Cayhuasi. The specimens of Classic character are most numerous in the case of the latter dwelling site. This is explained by the fact that Cayhuasi is located within the bounds of the Tiahuanaco focal area even if its location within this area is marginal. However, the great predominance of Decadent Tiahuanaco specimens at both Tupuraya

and Cayhuasi tends to show that settlement on either site reached its culmination during this interval.

Tupuraya reveals several of the features characteristic of the Tiahuanaco specimens in the Cochabamba area while the Cayhuasi specimens show greater affinity to those in the Tiahuanaco focal area. In the case of Cayhuasi, the geographical position might be the reason therefor with, in addition, the more patent Classic influence.

The Tupuraya Classic Tiahuanaco ware, coupled with the fact that Tupuraya Decadent Tiahuanaco ware shows more patent similarities with the ware of the Tiahuanaco focal area than with the ware of Arani, points to settlement at Tupuraya having commenced earlier than at Arani. Similarly, the greater homogeneity of the Tupuraya specimens prompts me to ascribe Tupurayan settlement a duration shorter than that of Arani. Compared with the Tiahuanaco focal area, the Tiahuanaco specimens of Mizque Valley are even more divergent, their Decadent character even more patent. Here, too, the geographical position might prove to be the reason — the Mizque area's more marginal location than the Cochabamba area's relative to the Tiahuanaco focal area.

If comparison is made with the traces in the form of the so-called Mollo ware which the Tiahuanaco culture has left behind in the Muñecas area (*Ponce Sanginés* 1957, 1957 a, *Rydén* 1957) — this area being situated approximately as the Cochabamba area relative to the eastern range of the Andes although nearer the Tiahuanaco focal area — one is struck by the fact that the specimens from the Cochabamba area, notwithstanding its more remote location, reflect a considerably stronger Tiahuanaco influence. Compared with the Tupuraya ware, the Mollo ware rather gives the impression of being poor locally-made imitations, with locally accented features, of the pottery types in the focal area. The reason for the inferiority of the Mollo ware would no doubt have to be sought in different living conditions. Notwithstanding its geographical position nearer the Tiahuanaco focal area, the Muñecas area must be regarded as an isolated backwoods region with strictly limited living conditions owing to climate and altitude above sea level. To the Muñecas area the culture impulses from the Tiahuanaco focal area found their way only with difficulty while having small chances for development (*MacBride* 1921 p. 13, *Rydén* 1957 p. 159). On the other hand, the Cochabamba area's present-day designation as "Bolivia's Garden" is by no means unjustified. The rich soil of the Cochabamba area is the reason for its being occupied by the densest agricultural population in Bolivia today (*Ogilvie* 1922 p. 27). Then as now, com-

pared with both the Muñecas area and the highland basin south of Lake Titicaca — the Tiahuanaco focal area — living conditions in this more receding terrain must have been more favourable, the chances for lucrative agrarian pursuits so much better.

Inasmuch as the Cochabamba valley forms part and parcel of the Bolivian Montaña region (*Weeks* 1946), exploitation of the Cochabamba area, like that of the Mizque area, no doubt brought some degree of difference in the material basis for the Tiahuanaco culture. In the Tiahuanaco focal area, agriculture was no doubt based on the cultivation of potatoes and quinoa in the first place. In the Cochabamba and Mizque areas these were replaced by maize. Maize-growing by the people settled on the Tupuraya mound is proved by the fragment of the typical maize-grinding stone from the spoliated chamber to Tu 21 (cf. folded Map I) as well as striation by a deseminated corncob on a fragment from Mizque Valley (*Rydén* 1956 p. 121). Thus, better prospects for making a living evidently lured the bearers of the Tiahuanaco culture to the Cochabamba area as early as the later phase of the Classic era, subsequently followed by a more independent development of the culture inheritance with, in consequence, cultural impulses from the Tiahuanaco focal area. However, this development notwithstanding, the affinity to the focal area is much too plain to label, at least in the case of Tupuraya, the Tiahuanaco specimens “derived” but instead a direct offshoot of the Tiahuanaco culture in the focal area albeit with certain specific local characteristics. The Tiahuanaco culture in Mizque Valley, on the other hand, shows somewhat more of the character by *Bennett* (1936 p. 501) labelled “derived”. The fact that in the Cochabamba area the Aymara, bearers of the Tiahuanaco culture, had to yield before a Mitamaes invasion following the Inca conquest is but natural. Conqueror peoples always grabbed the best land in a defeated country.

The influence of the Tiahuanaco culture in shaping and decorating the pottery of northwestern Argentina and northern Chile has been pointed to by many researchers (cf. for example *Uhle* 1922 p. 70 ff, *Rydén* 1944 Fig. 79: V, *Bregante* 1926 p. 251 ff, *Debenedetti* 1910 Fig. 155 p. 215 ff, 1917 Fig. 75 p. 110). However, data have thus far been lacking in respect of residual sites of Tiahuanaco character outside this culture’s focal area — the region immediately south of Lake Titicaca — and the Cochabamba-Mizque area, which could have indicated the diffusion route of the Tiahuanaco culture and its influence across the table-land in a southerly direction. The Tiahuanaco diffusion south-

wards is, however, shown by the Chicha pottery (*Métraux* 1933, *Ibarra Grasso* 1957 b, *Rydén* 1944 p. 138 ff.) found in southern highland Bolivia. Cayhuasi is at present the southernmost known residual site of Tiahuanaco character on the table-land. In a certain way Cayhuasi occupies a key position because, owing to its geographical position, it served as intermediary for the Tiahuanaco culture both to northern Chile and northwestern Argentina while also in some measure located on the route between the Cochabamba area and the Tiahuanaco culture's focal area south of Lake Titicaca.

East of Cayhuasi is actually found that opening in the eastern Cordillera which provides the most convenient access to the Cochabamba area from the highland basin. Nowadays the railway, most important overland communication between these two areas, and a highway as well run through this pass. The very same route was no doubt once followed also by the bearers of the Tiahuanaco culture and the cultural impulses from the Tiahuanaco focal area.

The Tiahuanaco culture was borne up by the Aymara. The large, square adobe tomb structures were erected by these same Indians albeit after the Tiahuanaco culture had seen its day. This type of burial is amply represented in the Oruro area — the southern section of the Aymara (Colla) district (*Rydén* 1947 Map 74 p. 410). The fact that a Tiahuanaco residential site now for the first time has been located confirms the identity of the Tiahuanaco culture bearers and the builders of the adobe tombs — all were Aymara.

Bennett (1936 p. 375 ff) is counting both the Cochabamba and the Mizque areas to "Lowland Bolivia". As border between Highland and Lowland Bolivia he seems to reckon roughly a line marked by the Cordillera Real. Even on this basis, however, closer scrutiny would prompt a more easterly location of such a border line. If, in addition, account is taken of the human factor — the limit for diffusion eastwards to the lowlands of the highland cultures, Tiahuanaco and Incan — the accuracy of this dividing line would be greater if drawn along the foot of the eastern slopes of the Andes. East of both the Cochabamba area and Mizque Valley, the steep eastern slopes of the Andes actually form a sharply defined cultural border — a virtually insurmountable barrier (cf. *Ogilvie* 1925 pp. 26—27). Continuing, we need not venture so very far into the lowlands of eastern Bolivia to find that the ancient cultures of this region — e. g. the Rurenabaque area (collection in Gothenburg's Ethnographical Museum acquired 1928), the Mojos specimens (*Nordenskiöld* 1913, 1930) — show greater affinity to the

residue of the distant Amazon estuary than to that of the highland to the west almost within sight.

Even so, proximity of the tropical lowland cultures did not leave the Tiahuanaco culture in the Cochabamba and Mizque areas entirely unaffected.

Nordenskiöld (1920 p. 185) shows that urn burials is a mode of interment typical of the lowland areas without being hereabouts, as claimed by some, an exclusive characteristic of the Guaraní tribes. The consequences of *Nordenskiöld*'s results are further amplified by *Bennett* (1936 p. 377) when he says:

«Urn burial is not a characteristic of either Tiahuanaco or Inca civilization in the Highland region. In the Lowlands, however, urns are found in many of the sites. Consequently, the presence or absence of urns is of great importance, especially when it is shown that sites with unquestionable Tiahuanaco or Inca material are not accompanied by urns even in the Lowlands. On the other hand, adult urn burial is considered typical of Guaraní civilization by most authors. That similar burials are also typical of some non-Guaraní groups has been clearly demonstrated by *Nordenskiöld*. Consequently, aside from the presence or absence of urns, the subject must be considered from the angle of the type of urn and the manner of urn burial; in other words, the urn shapes, painting, modelling, corrugating, tripod, and the method of covering with stone, bowl, sherd, or another urn, are all factors entering into the classification».

As far as now known concerning the manner of burial in the Tiahuanaco focal area, the most customary type of burial seems to have been a slab cist (*Bennett* 1936 p. 413 ff. *Rydén* 1947 pp. 138, 169, *Portugal* 1955, *Perrin Pando* 1957, *Ibarra Grasso* 1957 a p. 209). Add to this the fact that this type of burial apparently reached the Muñecas area together with the Tiahuanaco culture (*Ponce Sanginés* 1957, 1957 a, *Rydén* 1957). That the burials in the Cochabamba area got a different form is explained by the lack of suitable construction material — stone slabs. The urn burials with Tiahuanaco were found when examining the Tupuraya mound constitute evidence of culture influence from the east — from the cultures of the tropical lowland area. As a matter of fact, east of the aforementioned cultural border line, this manner of burial is common. Again, in the case of the urn burials, several of the details disclosed in course of the Tupuraya examination find their parallels in the tropical lowland, e. g. the covering of the urn by a pot, the trunion-shaped protuberances replacing the ears, etc. On the other hand, appearance of the ear on burial urns has to be regarded as influence from the highland (*Nordenskiöld* 1917 p. 18). The covering of the urn by a stone may also prove to be a western detail connected with urn burial, this inasmuch as stone does not occur within large sections of

those areas in the tropical eastern lowlands where urn burials occur, e. g. Mojos. The first urn burials conceivably adducible to the Tiahuanaco culture are some child burials in Mizque Valley examined by *Nordenskiöld* (1917 p. 18, *Rydén* 1956 p. 119) which he regards as indicating contact between the Tiahuanaco culture and the cultures of the tropical lowland area of eastern Bolivia. Nevertheless, a great deal speaks for the Mizque Valley urn burials as representing, relative to the Tiahuanaco culture in this area, an independent culture, perhaps earlier and with interrelations in an easterly direction (*Rydén* 1956 pp. 119, 126). While the examinations by *Bennett* (1936) at Arani and a couple of additional sites in the Cochabamba area indicated the occurrence of urn burials in this area, the examination of Tupuraya is, however, the first to yield definite evidence that this mode of burial is directly adducible to the Tiahuanaco culture. However, in the case of the Cochabamba area it must be stressed that urn burials apparently characterize also the Chullpa Pampa culture (*Rydén* 1952 p. 43).

The occurrence of tripod ware in the Mizque area in association with Tiahuanaco ware has been pointed out by *Nordenskiöld* (1917 p. 18) and *Rydén* (1954 pp. 112, 125), as later by *Ibarra Grasso* (1952 p. 18), as additional evidence of culture influence from the lowlands in a westerly direction. The chiefly eastern distribution of tripod ware in South America has also been stressed by *King* (1948) partly on the basis of *Nordenskiöld's* research in eastern Bolivia early this century. In the case of Tupuraya and Cayhuasi, the origin of the tripod ware — the Chuquisaca Mojocoya Tricolor Ware (*Bramisa* 1957 pp. 316—317) — is emphasized by the fact that this sort of ware is featured by decoration divergent from that characterizing the Tiahuanaco ware, while also tripod ware is missing in the Tiahuanaco focal area. Again, the occurrence of tripod ware at Cayhuasi shows that the culture influence in a westerly direction from the lowland which this type of ware represents also had reached the highland basin and, consequently, also a marginal dwelling site within the Tiahuanaco focal area. At Tupuraya and Cayhuasi the tripod ware — the Chuquisaca Mojocoya Tricolor Ware — is found at the same residual depth, this fact further underlining the connection between these two sites. As earlier mentioned, the sherds of this ware at least in the case of Tupuraya are so numerous and so concentrated to an identical level as to preclude an explanation of its occurrence as the result of pottery-trading but rather as evidence of manufacture on the spot by an alien populative influx during the initial settlement at Tupuraya and Cayhuasi. For such dating speaks

the appearance of the Chuquisaca Mojocoya Tricolor Ware in the nethermost strata.

Mention has already been made of the reasons why in the case of Tupuraya, possibly also Cayhuasi, a relatively brief period of settlement during Decadent Tiahuanaco times, while initiated in the Classic era, must be reckoned with. The sherds from subsequent days encountered at either site are too few to substantiate the use of these sites for permanent settlement at a later date. As regards Tupuraya, the absence of so-called post-Decadent Tiahuanaco ware (*Rydén* 1947 p. 150 ff), subsequently termed Khonkho Black-on-Red (*Bennett* 1950 p. 94), can be explained by the replacement by Mitamaes in the Cochabamba area of the Aymara population — bearers of the Tiahuanaco culture and simultaneously originators of the post-Decadent Tiahuanaco ware. In the case of Cayhuasi, sherds of Inca ware are missing. On the other hand, sherds of such ware have been found in quantity close by, i. e. at Paria on the Cayhuasi-Oruro road, apparently a centre of pottery production also at an earlier stage (personal advice by *Lisandro Condarco*, Oruro). This would show that we once had an Incan Mitamaes population also in the immediate vicinity of Cayhuasi, alternatively a strong Incaization of the late Aymara Tiahuanaco ware. On the other hand, the specimens from the libation spot at Cayhuasi represent the post-Decadent Tiahuanaco ware. Thus they represent a people identical with the one-time settlers of the Tiahuanaco dwelling site at Cayhuasi, albeit a later epoch. Inasmuch as this ware is missing on the dwelling site examined, the actual habitations of its makers must be sought in other quarters around Cayhuasi. With our present knowledge of the libation ware, a more exact dating thereof would imply some degree of uncertainty. Most likely, however, would be the times immediately prior to the Conquest, possibly the times immediately subsequent thereto. Again, the libation specimens are likely to be of about the same age as the nearby tomb structures. At the time in question such structures were actually in use (*Tschopik* 1946, *Rydén* 1947).

The examinations in the Cochabamba area here reported as well as the examinations in the Mollo area mentioned in an earlier report show, as do the data resultant from Nordenskiöld's research in the Mizque area, that the Tiahuanaco culture outside the focal area adopted only certain types of the vessels in the focal area, whereby the decorative evolution in the case of these vessels assumed a local character. The Tiahuanaco-influenced ware from Pucara in southern Peru seems

to reflect the same trend although further accentuated (*Kidder 1948*). Hence the Tiahuanaco culture in marginal areas shows for each area specific characteristics applying in the first place to the decoration. The farther away one gets from the focal area the more differentiated these locally confined areas become. These facts recall *Bennett's* (1936 p. 501) characterization of the Tiahuanaco culture:

«In the Highlands (read: Tiahuanaco focal area), the Classic Tiahuanaco has not been broken up into subdivisions, although some have been suggested.»

Examination of two pueblo establishments on the Desaguadero plain — Palli Marca and Cchaucha del Kjula Marca (*Rydén 1947* pp. 182—342) — revealed the occurrence within the Tiahuanaco focal area of such establishments with virtually pure Inca ware. I have been inclined to view these establishments as evidence of a Mitamaes population — Inca colonizers from the Cuzco area — within the erstwhile focal area. However, a specific form of decoration — the so-called “llamita” decoration (*Rydén 1947* p. 310 Map 43) — in conjunction with sporadic discoveries of post-Tiahuanaco ware on these two sites would indicate the possibility that we have here to do with a thoroughly Incaized Aymara population. Consequently, the examinations of Palli Marca and Cchaucha del Kjula Marca would tend to show that in the matter of pottery-making a subjugated people would go to the extent of completely revising models and decoration and change over to the vessel types and decoration of their conquerors. If so, a similar explanation would also apply to the locally confined forms assumed by the Tiahuanaco culture in, say, the Mizque and Cochabamba areas as well as the occurrence of Chuquisaca Mojocoya Tricolor Ware in the earliest culture strata of Tupuraya and Cayhuasi. Future research in the Mizque and Cochabamba areas is bound to reveal older, possibly also contemporary, cultures relative to the Tiahuanaco culture in both areas. The Chullpa Pampa specimens, the occurrence of Chuquisaca Mojocoya Tricolor Ware, as well as the grey-ware specimens from the Mizque area, already hint at the existence of such cultures.»

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